Clinical Pharmacy.

< Course Summary >

Student: Aya Maher Fatooh

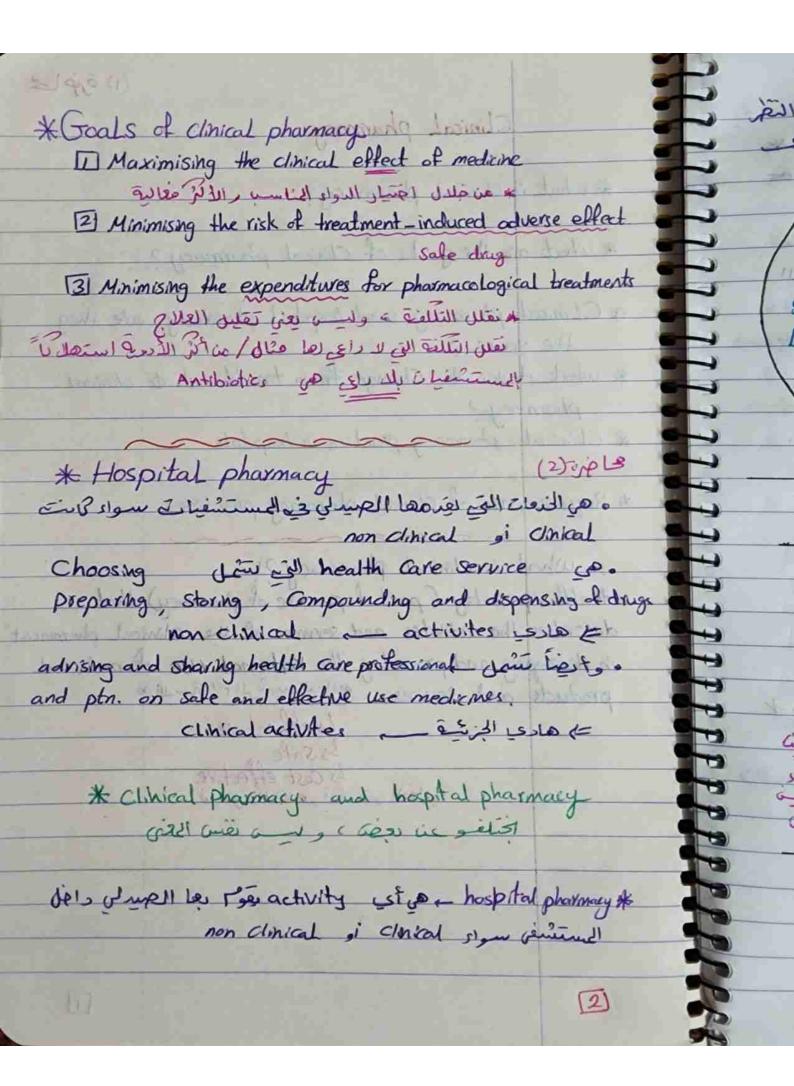
Lecturer: Dr. Hala Al-agha

Semester: First Semester of the year 2022/2023

alazharpharmacy.com



عاصرة (١) Clinical pharmacy * what is clinical pharmacy? & what are the goals of Clinical pharmacy? 131 Manusony the expendence for phonountogical hadred * Clinical pharmacy and hospital pharmacy, are they the same? * what drives the Change from traditional to clinical pharmacy? & Clinical pharmacy practice in hospitals. to the pital pharmany * Requirements of clinical pharmacy practice. * what is clinical pharmacy? Health specialty (part of practice of pharmacy) that describes the activities and services of the clinical pharmacist products and devices. ** strength use of medicinal products and devices. ** Geffective विश्वाहिश कर क्या के क्या करें depoint total a to the transition of the property



pul view chinical activities in e zone clinical pharmage تَصِيدُ فِي همارسها بالمستشعي أو رعايات محبة أذع Hospital pharmacy Clinical pharmay Buying activities clinical in the activities storing hospital outside the Dispensing Compounding hospital Wash their ex Traditional hospital Clinical orrented - Drug product
- Drug therapy
- Pharmacy
- Bedside
- Covegiver up Nally to - Solo egg - Taem - Taem - knowledge - Information + يشارك العاماء مع الدرين (المالية المالية العاماء مع الد مشارلة العاماء مع الد عن المالية supplied and some some laboration is the some half in this are chical effect dela hours and IOO - strandings yllowidd out with the sign that is £ 19,00, 18 10(c) 1101 [3]

* What drives such transition? clinical of traditional pharmages transfor in the is we * anical activities and e que clinical pharmay in it is = Badle aniph any in lose o themend is من المستشفيات ، وما زالم المستشفيات هي الملاك إلى فيه السوع Leve is 31 chical ph activities is 311 ع مر و الى خلى في العالم لكه يصير هذا المقول من الصيلية التعليدية إلى العسالة الوكلينيلية (أو السريرية) medications errors & 21, 11, 16 4 11 2 2 1 1 11 m is medical error, medication errors in medical errors * سَمُل الْمَظِاء الربَطِة * سَمُل الْمَظِاء الربَطِة * عَضَم الْمُفَادِفُ وَعُم الْمُفَادِفُ الْمُفَادِفُ الْم المرجمام الدواء مقط من المعالم auxicupci lipo de Drug - Drug interactions 150 2 verror so DDI wine * interactions & is wife Clinically non signetficant is will with عُلاً دواء عزود عمل لمواء آخر أو يقلل ممل لمواء آخر للن م ع . Chrical effect is see ip, i من الموائية والموائية والموائية عنوع الموائية عنوع الموائية يمَ أُخِذهم مع يعف

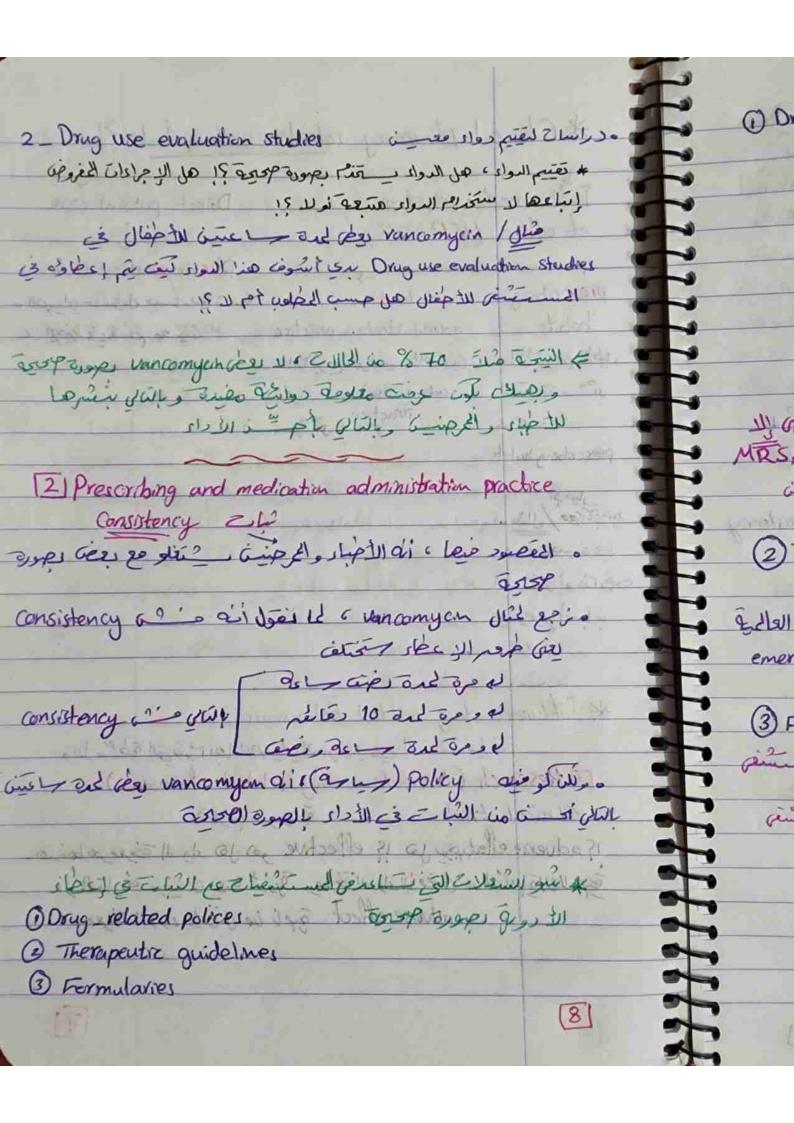
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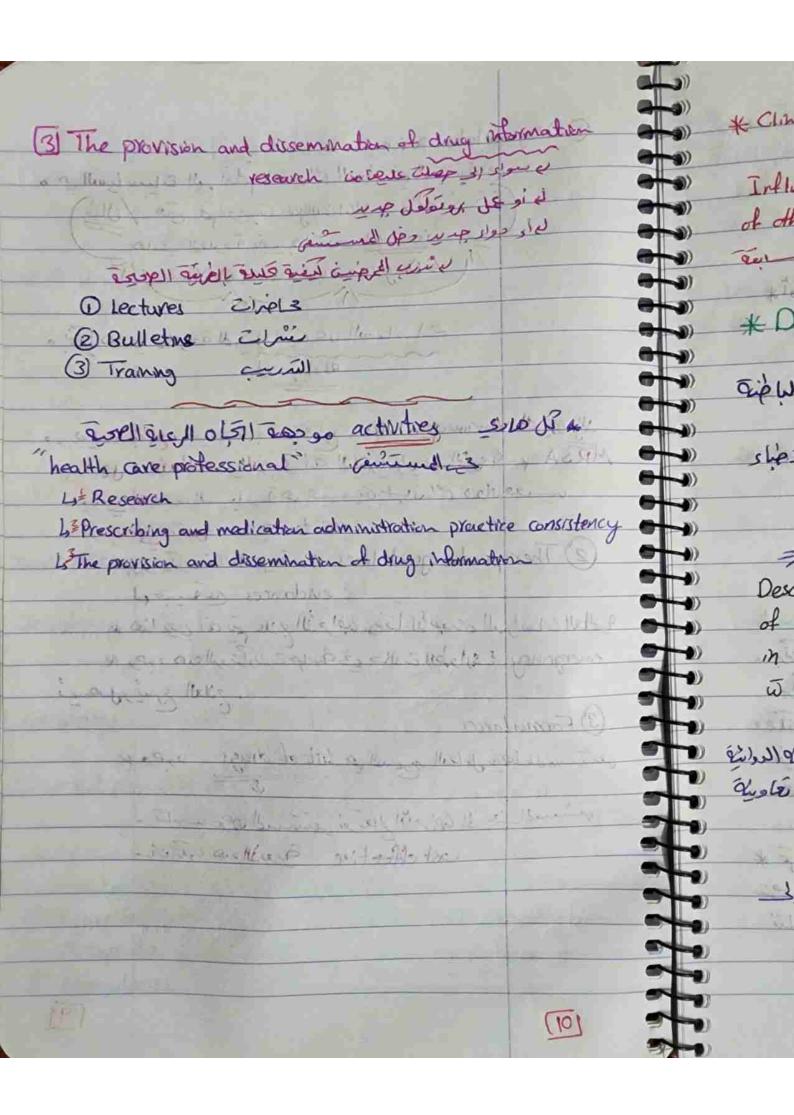
15 envertigation de réche errors que il ois à frict cro الولان عنى استخدام مع مع معاميًا الله المعاملة ا Contrainde cated drug drug interaction . وهادي الأدوق بتكون ب ستم قليلة جهدًا count promone south on a secret trains 19 Clinical signettiont an DOI wit. وهل هذه السالمة / هو السّاعد سن الدُرورة أو يعليل جرعة المواء إذا كان الدواء بزور .cone أو أزور جرعة الدواء إذا كان الدواء يعلل cone. Contraindicated iB d error in 6 ZUBB is EVOVS in DDI is the is to Bis in signet is and chinical signethicant is a signethicant and the land in the FLV at legio and agree with a lo prescribing errors & act who is the to amplified by the light of the हां द किया कि कि कि कि कि कि prescribing errors « [administration_ is lep « Get leis dia 114 preparation is lept * الأَخِطَاء المواتِية نَاجَة عِنَا وَجُود زِعَة لَيْرِهُ فَي السِينَفِياء و الريماياء العِجوة ؟ @ عددالله طباء عليل معرية عدد الرض (3) أن العلوما تالدوائة لاحدر باستمار 5

* فيال/ الان على عن الدُّوطاء الدوائدة => Paediatric ICU Jieptu 3 ; placellare • هذه الدراسة بينت أن الجزء المؤلم من الأرمة المعطاة للأجفال خلال فترة 18 le prescribing evror dédu ce 0/2613 878 Évres émbral ais الدراسة انعبت في وقت مالان في عالمان في • بنفس الموقت وفي نقس المان وع نفس المرض 47 % من الأدوية المعطاة ele medication administration error désignérie co vient لا مُؤَكُّمُن الحرض في إعفاد الدواء على المرابع على الرائدة على الرائد من 65 \ من المرائدة على الرائدة على الرائد . هنه الدراسة بينت أنه ٤٤٧ منالجي عناهم عمالاً على دواء والمد inappropriate curiene Clinical pharmacy _slaps is cip slal in _slal in Quel Ties Ice [2] 3 m 300 die 300 mis le 400 die 300 die 200 die لعلية ما فهم النظورالصناي. * Clinical pharmacy activities & (8) July 15 The 12 Out the hospital in the haspital

* Clinical pharmacy activities in hospitals ?! Influence the practice Direct patient care of other HCP Pharmaceutral Care administration practice inso que is injectice habits والمأثيري الحرجنية للحسية والتأثيري الأطباء an amountation in acre practice prescribing habits 121 Preso by and motorter administration pro production عال المعامد ال المستسنى أوعدا وجوده may more a by each ind on the prostrations ع يومير أسار * Influence drug related behaviours والأ روع التي يقوم بعا العسرى السررى في المستشفيات D Research (to create a drug-related information) 1- Clinical trials 15 adverse estatipe 10 18 effective es de il significano أو المقارنة سي عدة أدولاً ومع فه الدواد الأفضل من الناصة العلاجية adverse effect que i is dies il si vi deze,



1 Drug related polices دراساح ليق · في السيا سياح التي أجلم استزام المواد في المستشفي * تقسم الم (55 inde 5 vancomyon caps a to / Olio إنباعها resorch is lawin asled will 11 6 Drug use evaluation studies 11 studies • بنيلي هادي المعلومة للمسلولية عن السياسات the quicks السر Il cold vancomyon cop en ail as hul elde alle, MRSA = 98/21 25 01 1 pull al asilly culture de to الملك العنفين السيارة هو احتي المرتدام دواد معين resistances du silles ال (2) Therapeutic guide lines Explain 19 evidances required * هذا يمني أنه منم علاج الأفرافي وفقاً للأجدث الدراسات العالمية emergancy : الموتوكولا عامة في حالدة الطوالة : emergancy تسعلويسرع العلاج (3) Formularres amund be bled gend to lot of drugs م رلان of WIL cost effective audition istit-191 101)



Elgie (E) * Clinical pharmacy activities in hospitals? Influence the practice "Direct Ptn Care "
of other HCP

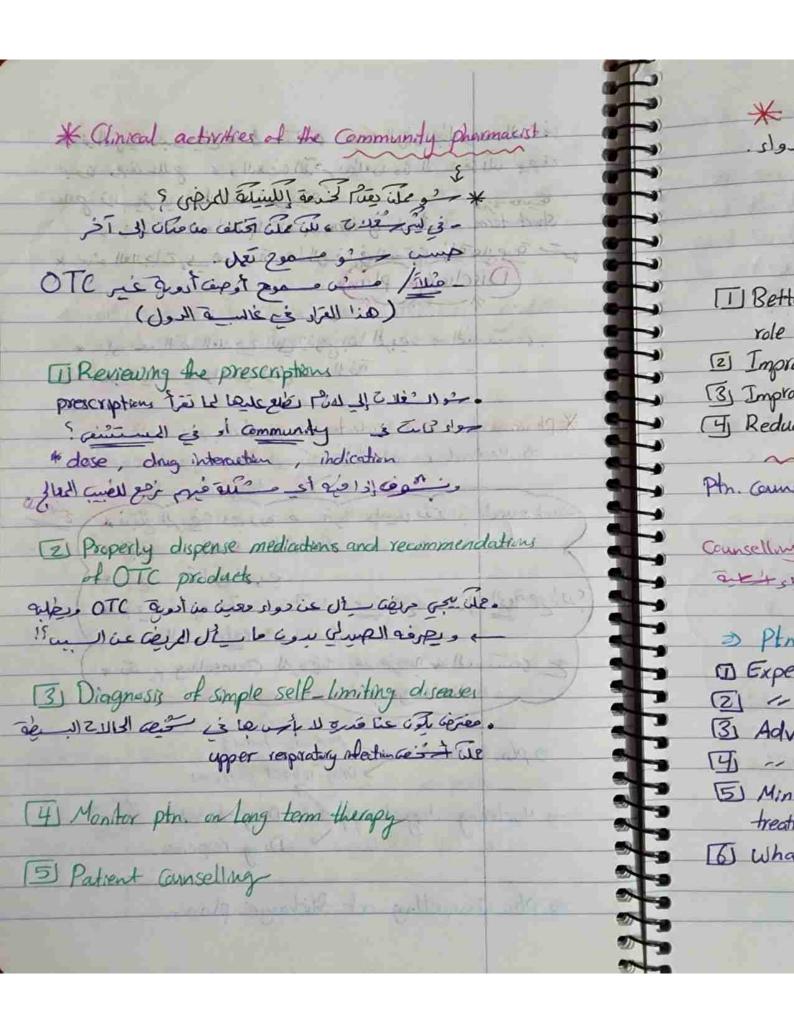
Fharmaceutical Care 3 3 3 3 * Direct ptn. Caretin Care و يعمل الصيرلي في قسم ععين في المستشفي مثلاً: أن بلوك صدولاً في قسم العناؤ المركزكة أو قسم الباضة 3 3 أو مسم الجراع ق --- الخ . 1 0 وسيؤول عن كل الحرص الموجودية في هذا العسم ، منه الله طاء ال فولية عما الرجى في نقت القسم. 9 39+ ency 3 => Pharmaceutical Care: 3 9 Describes the responsibility of the pharmacist to meet all of the patient's drug related needs and assist the patient 3 in achieving his or her medical goals through Collaboration w other health professionals. 3 * الصيلى لوًى صفول عن المريض وصفول عن ال المساجا كه الدولية abelé que ph. care juis 6 ties outcomes Il vos cos 3 5 ال و غل بلون مع خريم . all Enteringer a devalit to the little and as the top the the ne added to the T

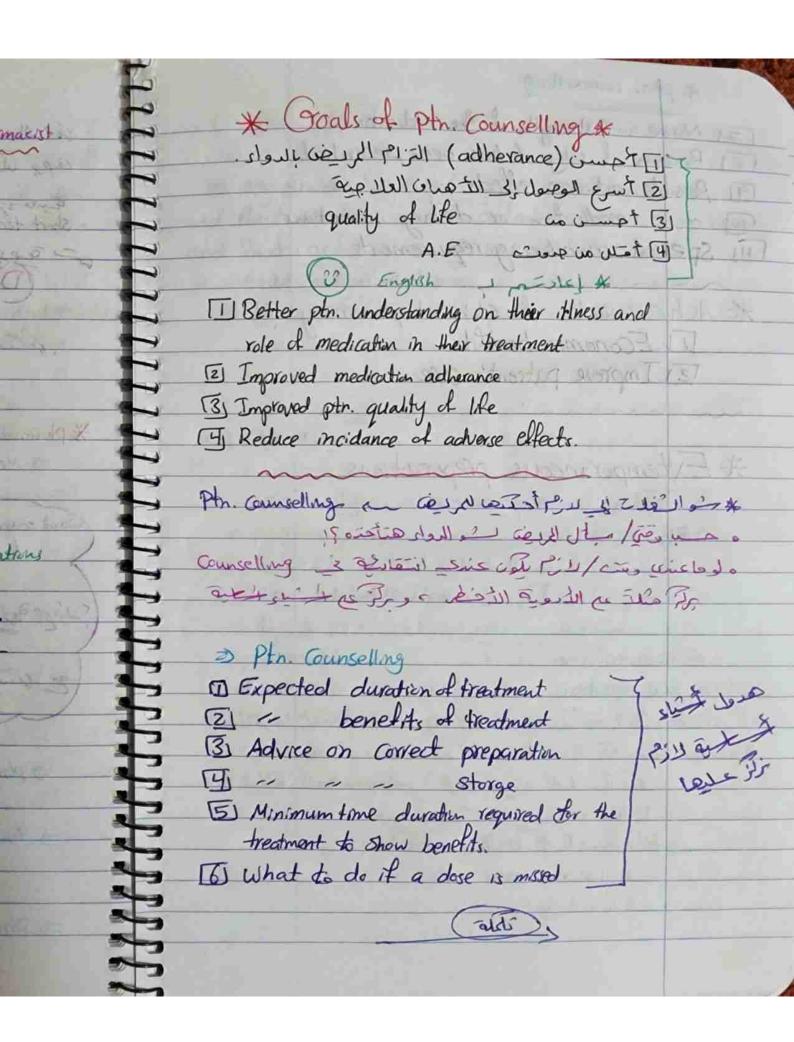
celled love wed activities of drug related needs of ptr. 220 A Pharmaceutical Care. , and of spell of the stary det of the stary det of the stary det of the stary of the medication history restriction it is * I well leter of Interview any rojal * 19 health care professionals love it Interview Interview Describer the regions the strangers to make all Pharmacist Other health care partersional م بركزوا عم الوضع الحالي للريف ميكزوا عم الأدمية medication history (if xleight which • عَلَنَ يُجَاوِرُوا أصور معينة شاعد علن يجاوروا امور معينة شاعد في الحكم على وجنه أو تعلى من أفطع in la vias عَلَى اللَّهُ اللّ ال عظار الدوائية.

Tile wife in 60 0 & commed dis ces policipies / dis and me as good still a Chest infation + suspected infation ال أر شاة HCP متلون عن الوجنع الحالي المريض حتى بيستنصوا الرق ، نفر في الله هذا الهافي عنده الرافي وينه ولان بإفوانورو ي الم من ألى عنها من عبل الطبيع أوالعم عنه . dela in a Chest pan wholm appe in cery it /25 juil الليونة التي كان لأذها الربق ، الله وجود الصباك مم علاله الم ول على أبورة الحريفة . الحريب المرابع المر psychiatore ptn. (m à " il opscier / cere vis ist to use thest par I stee to chest infection ones antidepressent drugs 211c A Can lieg on Il gale may Omission drug error * على نَجِلُ عمل من كل عمل نَفِيلُ مَلَا لا عمل الله عنه الله عمل intection as ile sillicitel a real order are The sie of the ord of of one of the Litor afection as is es ep, - بالله عنا اللهم لازم نأخنه بعيل الدعتبار لما يوصف أدوق حديد للريف في المعطم الديرة ، على الدورة ال عقة التي ريب عنو صالاً من أبدلها أو أومقها ، أو علما الأدوق ال بعة إلى ما ونع بعامنه والمام و والمعلم و ما المعلم عند أخذ هذه العلومات من الهيف سه هقدراً م من العلم العلامة.

Pharmaceutical Care activities Medical rounds or ward rounds ophiell so و عادياً علون لفع صاحة والدِّما عن اليوا و في أمسًام مبلون اللغة الصباعة عن أو عرب ما بالدَّروع A ward rounds A visit made by the clinical team (HCP and medical students) to haspital patients at their bedside to review and follow up the progress in their health. Importance of ward rounds c3 vinell aget in & in and we tour brands from the Mary of the city of 5 other HCP, cerda wil dues ... church sounds goof * Overall of very good (Jules) usic rue 250 (Jules) usic rue 250 يعنى بلون الصيرلي موجود من السارة مع الأطباء بالتالي صارعندالصدل فقم الحالة وبإلى يفر الصيرى بعلى راكيه . किर्मिशिकिकि हिन्दि . Ties 323 all day whenten che due! من / رئر الدواء الأفضل لهنه لكالة . . . الصبيلي مسؤول عن الحرض الموحودين بالمست werd rounds see I letted 5 120 ward rounds see

ce 21 is get of I see (see und is the on se all of * لبون رجن علاج ، و العبن الدّخر بطِلعوا من الح في لك بوجن sphell will علاج (يَمْ فَي علاجِلاتَ عَعَلَيْهِ فِي سِيَّهِ) علاج (مِنْ فَي عَلَيْهِ فَي سِيَّهِ) على عَلَيْهِ مَعْلَيْهِ Short term of Long term مدة العلاجات من العلاجات من العلاجات من العلاجات من العلاجات من العلاجات من العلاجات م م عَالِماً تَلُونَ لَمَ م في أحسام * و العلاجال إلى هم تنعها الحريض في الستى وطه علاجية م Discharge Plan medical students) * عبارة عن الخطة العلاجية التي رخرج بها المريض من الخطة العلاجية التي رخرج بها المريض and follow * العسلى د عادلة في وضع هذه الخطة. * pharmacatheal care activities ; , therapeutic plan apt in the 3 Medical round 3,2 discharge plan 2 Circling drug information that the المصدلى بالد Ward sounds , see and of a some cierd airi & medication sheets 2 is 4 * نتبع الحاليل المربض (x) is a still is sois one is It It is as it is 51) 51 rate 11 15! of Gimend is appir in weight counseling ever * discharge plan > ptn. interview ____ Medicatan history o Drug-related problems 2980 F -> Montering drug therapy - Drug dexisties 3) Ptn. Counselling at discharge plan.





of pta Counselling (8) Reason of why it has been prescribed. Possible adverse effects " medication or dietary interactions III special monitoring requirements. * Achievements of clinical pharmacy ?! I Economic benefits 2) Improve patient's care Reduct midung of whom elected * Extemporaneous preparations

4346 * Drug related problems any undesirable event experienced by the ptn. 11 and that involves or is suspected to involve drug therapy and that actually or potentially interferes with 7 a desired patient outcome. es cérter de la 19 problem leine la 21 * desired patient autrame. a-lid Whielies by toxity => actually undesirable event desire wit => potentially ms - we doe does * 12 min water ble bet the d. The to 11/4/1 drug-related problems to when the By sold toll of the Stomes preventable non preventable =) errors => adverse drug reaction. * أكد الله عند للم منها عن يكون التج عن خطأ ، عَلَا لما نعمَل أيه it (prescriper) careful in les is estillation alle acid cipel in les all administration all in Fit it is ile أو الخفائمن المراض أوال فول عن المراف Pediatrics 3 apris 95,3 June is this prescriber in by more shaped apadadid a man 6/2 ango (0.15 . 2/00.

Adverse day reaction nonpreventable un DRPs un go ADRI jus cui 3 = لله هذا الله اح م د فيم لير و لذك المنا عنى الم لير منا الله Here I is so suctors or the last of the distance of the wind on genetic polymorphism besie distres our in sie of * عرضا هذه العلومة ، رو البجماء الي لائم نآخذه ؟! الم العاد العاد (1) 5 nonpreventable (1) so was do stuy as ADRO COND QUED code quie elses in we preventable col wis wis wis to Types of Drug related publishes untreated indication 1) => untreated indication * usis of sin origination of the of the of the leads على ملون الدول عث موجوف له، أو الحرج نسى العطه إياه، أو المري ما لمراه للرساع معنية 2) treatment without indication * علس الريبة) دوار علموت داع م ماسيد المديد المدي word infations was antibioting that / we sail (3) > improper drug selection * احسار الدول عير هذا من الحالة المرحية. (4) => too little drug ~ low dose (5) to much drug - high dose (6) > non compliance ~ mot adherance ptn. is not tollowing thesepartic regemin . Out 62 Class Greet at

4 سؤال اجت se day reaction 15 Compliance o adherance م في الما معلى الم لله هذا الله _ adherance of compliance social & WE GENER انه المريف من ملترا باخذ الدواى وذلك الديان كترة ar 605 is significant counseling as little de وط لدقاه بالتابي زهم بالتابي ما التي بالدواء d barrest أو أسال أخرى ورو الفيد * (7) ⇒ Adverse drug reaction

Cliptellogiptellow is focus up . ORPs in July up * ع بالتاكي هل 7 W22 E (8) Drug interactions syntiant coli lovo 2 0 1 * Adverse Drug Reactions *

Thalidomide tragedy -> Phocomelia Il mie & Cipldical 2 Line of is 2 line is a tragedy in a life أسم ع two 1 4s Time resultagenic effect is give it is a and the most that the second translation and the second of the later (3) 12

& Thalidomide deal lie & auto regulations تصبط مرين اللخوي وكن له ما العود الحالية الحالية toller in a water fie that will the follows Vis approval ist deal at a regulations END & Col Pullido por a por Man Die ise 18 100 11 approval rejest dis testes is un sis is us us preclinical Clinical trials The de colina 880 , company be the tissue cultures six -terotogenicity , assisted to - Carcinogenicity un sus tustings مع regulations في زمان ما لاست مورة ، بالمالى ننل هذا الدواء إلى الدوم vomiting, nouseque to a very effective CB عند الحوامل مرالماى لم يماموه عدد لير ما الحوامل अ का देखें कि के कि हैं कि है कि के कि के कि Chi I best 22 mules of phocomelia Eulo Thalldowide with the The dead de ZUIS 0,0 ic Pup ZUIS & Case report les jois Thatidamide , a Zulisto is in il tol d'i géois م و عدما خور در اماد آئیسے لا و و بعدما استه ما الرب as anticancerding a westing is is the

(4)

Zimil 2130 Thalidamide tragedy & Trail white sup 3 por 10 regulations Esiego is Tup il الشركان عن يعلى اخارع ليرة قبل عاالمداء يأخذ المعاموم about our success of took post in the succession of the -अ ही र राष्ट्र के हिंग किया विका विकार कि का दार दि है। अ to seemble to the things of the property of the property of Practolol (Cardioselective B-adrenergic blocker) ع زل عمال وور في عرجله كا عنها منالمعلم شديد ، علوا هارب appreval ist Clinical Studies - Ziversles In ع بعد ط خل ال ومر توالت د مرود عن طلاح الحصل عنها - psoriass-like raches i intellise cus. irreverible blindness Louis up 2 210 is, . & rapid an management or of call strike with significant mostality No silve praetalol wo to swill watte ع الدرس لي لازم بغونه من عصة المالم pract ما ما عصة المواء على الدواء على الدواء على الدواء على الدواء على الدواء الدواء المالية وحرافيه الدواء " Épolle, vio pharmacovigilance got is when [5]

* Definitions and alimability of the transfer of the state of th Advorse Drug Reactions ADR (WHO) 1972 =) is a response to a drug that is noxious an unintended and occurs at doses normally used in man for the prophylaxis, diagnosis or therapy of a disease or for modification of physiological function and sie i en - vie ich advorte et = >> response to a drug ريني رده خعل حسينه للدوائر within range of doces normally له الضبع الذي ستفر هذا الدوار فيه & le lépais es monograph es lietés A Theraputic window i Conc. In blood, min, conc. and max. conc. sland effect was price in Us - 60 in range of doses was 6 500 mg _ 2000 mg in day 1 1 500 1 mellet vot gie 2000 - effect est in early full air soundigues much, din to logar is

wed toxic effect cin 1/WHO ceres taxic dose le risai Tuela 2 3 300 inste. ADR. GOP Toxicity do cist Zlejs is a at ai 1 responses i DI2 de rigo bais witho cive + within ring of doses real cost of Testilio City House and send! 15 side effecti a Adverse reactions; ungill 2 والمعالمة الما معنى الما المعنى الما المعنى الما المعنى ال on just essell and Minoadil / Olio part. is used as antihypertensive ly used in alopecta (ass.E) لع بزود غو السعرى فروم الراس * Mettermin Loff lebal use as loss weight Side effect includes unexpected beneficial effects of the product (7) 6

Type * Adverse drug event (ADE) => refers to an adverse outcome that occurs offer Type the use of the drug. Au 15 AD reaction a AD elevet a rejular of eff Well all outer 11 auto o . 11 ah wall got souther loss são do destr. * Classification of ADRs hypo => Extended Raulins_Thompson Classification inco al pomes à ADRs caires de deix 15 0 Type A as vine reils ADRs & di 16 2 II Lans & MONG helz belz 6) Types of ADRS - hypotens Side effect water or unaccepted house at allow _ brady card destroy ed to (8)

Type of reaction Features Examples Common Brady Cardia Predictable associated w معند أو بهاده Augmented Dose-dependant B-adrenergic bloker Low modelity Pharmacological Low murbidity effects. يعنى دواد بقلل مستوى السكر في الما بزيادة و * Dose response relationship hypoglycemia sup विद्री रा विद्र effect Zsi 15 Teogra alim d do # MOT REJECTUC EN Adverse & goll wie & slad liat pharmardogy Map - Think صورت من قبل ما ينزل لدواد , mortality wice (وأدرية الضغط لولمضة 15 alle marbidity hypotens effect predictable with. • الدواء إلى بقلل خرباح العكب bradycarda, 54; oft 180 (9) (8)

EMERGINE Anaphaxis TypeB uncommon associated unpredictable Bizarre effects (not) dose dependent peniallin high mortality not related to high morbidity the pharmacological effects. May a deals in labor peniallin / disa any antibioties it يعد أخذ هذا المعار SMOA >5 of heamotytic anemiasi acute nephrais 101

Walle Markey 1873 D. I may and HPA axis Type C - uncommon Suppression by axis dose-related - Related to Conticosteroids. and land amulative dose & systemic to - 4 time-related inflammation Zulo - Continuous Yours i mmundseases did de due to long-term gratif a love drug use. as systemica Cs Ting 131 46 Sig Teas 8/6- 91 لأنه الجسم في هذه الحالة من هيون عنيه كى من د فول الجسم ولا من الخارج (skell sight sindocrindogy is size is to indocrindogy is size is in indocrindogy is size is indocrindogy is size is indocrindogy is size in indocrindogy is size is indocrindogy is size indocrindogy is size indocrindogy is size indocrindogy is size indocrindogy indocrindogy is size indocrindogy is size indocrindogy indocrindogy is size indocrindogy in باللكي برجع المريف يعاني من الم "كلة بين لمروا من عَبل Hypothamus pitutary advenal gland wis - peripheral gland hormones release (2) regulation of secretions 2 - Ve feed back - impotralmuse jew cortisol Leter 19 (orthand cees 28- lo glid printary " 字

Get al of the ciental se dose of the deservent il 40 (Brown physiological level) exogenis Cs 108000 inhibition of hypothalmus and pitutory and pitutary asho is 2 ct

Type D Uncommon Carcinagenesis usually dose related. قدرة للدوية ع Time related - becomes apparent concer on - 41 let) some time after co and will co ا و برجنو the use of drug. Some auticancers dose related il Timerelated gills out # له بعيديم فدي الدواء صلى الحسم ١١ Kuzzuzy Continuous yours alkylating agents the part & aux wit copied. الدواء لعرة وجيبة. alkylatron of DNA في خلاما Gncer لو وجود الدوار في الجم لغرا my 3) so aires Suppression of HPA axis • وللن أنضاً لكن في الخلام الصبية golies adverse effects com lipas الموع المور ومن ومن الموقع المعروفة / مساقط الشعر، يؤثرهم 17 المعلى المرابع ولا في والله في والله في والله في والله bone marrow suporsion, de Mulis es is • وعلن يؤثرى خلال أخرى وها عوت من mutation وعلن يؤثرى خلال أخرى وها عوت من بالتك العلاج المرعع الخلط السمة وبعبها وتغنت الدواء promoter y cesul apri si 20 ,1 10 in ile is sup mutation of LUB air Erle's environmental factors i I Tumor de zie lair ancer Luis di Cost transformation signs and Symptoms + concer & (12)

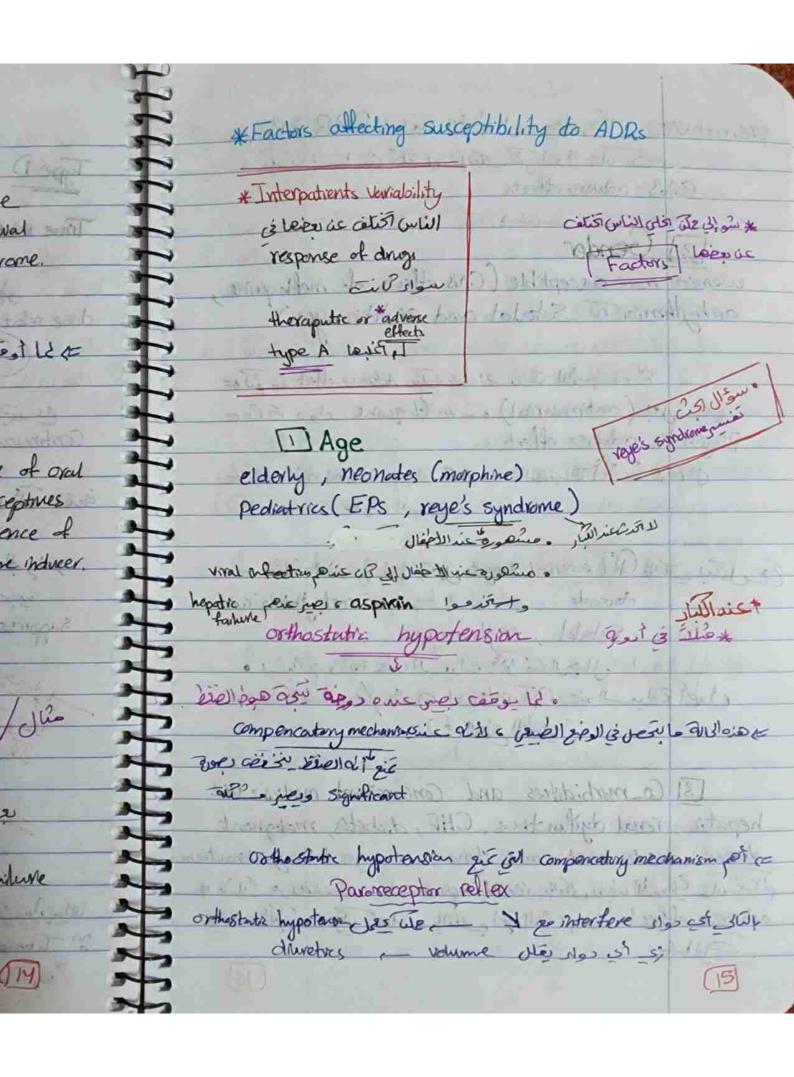
Type E - occurs son Opiate Carcinopened after the withdrawal withdrawal withdraway of the Syndrome. drug de lie visperies par le de le d Type F: Lype F:

- Common Faiture of oral
unexpected Dose related Contraceptives torbuse of therapy often cause in presence of Sie Col Jelo starte.

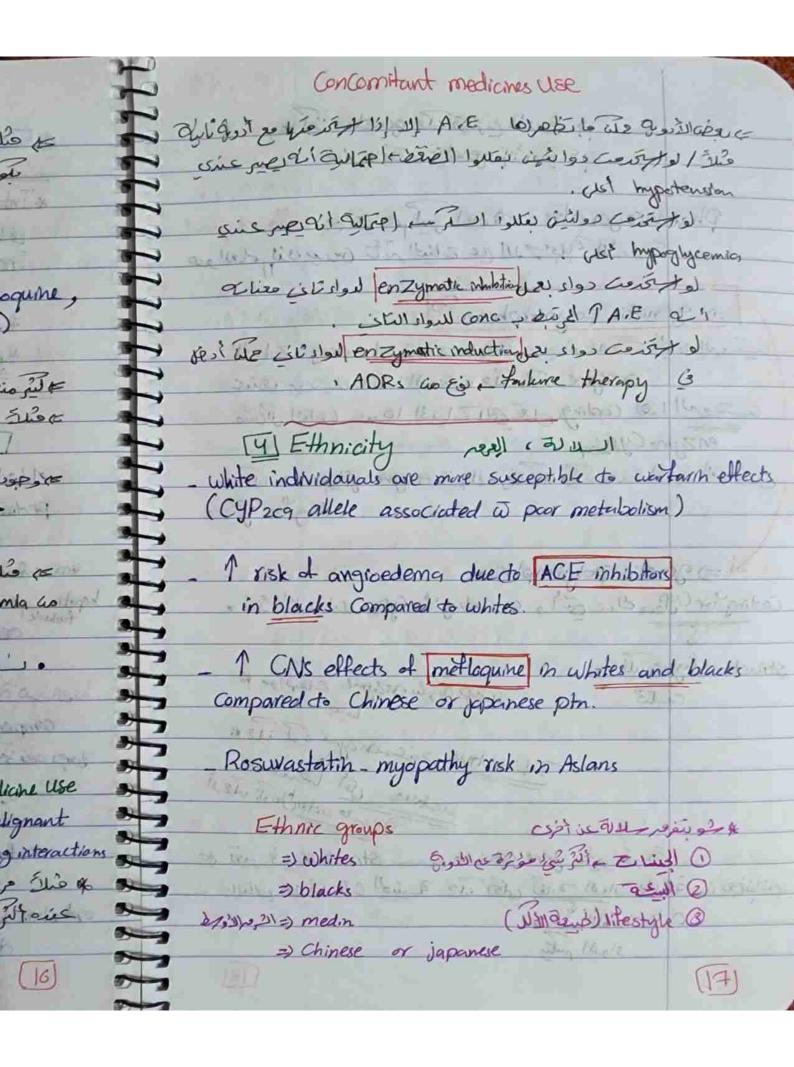
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Sie Colo sie Colo sie Colo.

Sie Colo sie vival or hepatic farhere enzymatic mouting en Gest ist leit lieurellare Ever ce I conc. of contraceptive , I effect , failure with the ship of the property of the state of the state of orthestatiz The Alexander of the state of the state of the state of the state of the The money of the graph to 014



premature Lesép, Mighty is BBB The de we get the wife the Con West CNS adverse effects women more susceptible (CNs effects of methogune, arrhythmia w Sotalol and eryhtromycin) " ce ful Du lie Este Adverse effect in file 5 de (antimalarral) - mottaquine 190 Elisa Psychotic adverse effects 9PA. عروجود اله اعمالية جود عرف عد السال والى من الرجال IN when I will disks a 2 - 1 go de stil OT orterval longating en il good Ties as torsade arrhythma as Sotably erythromyon · الله الموثقا عند السال الأي من الجال When I is QT internal of to / well (في العضع الصيم) [3] Co_morbidities and Concomitant medicale use hepatic, renal dysfunctions, CHF, diabetes, malignant disease due to kinetic and dynamic changes + Drug interactions 21 was go il cien stup renal imploument exicas This of adverse effect in gulie stuf de For sit ous



19 gentle certis in * 19 genetic Tesus de l'est ?! theraputre . العلم لذي بيرس تأثير الحيناح عن الدر توبه للدوري 3) genetic polymorphism (P) Lind Coding There is a coding This enzyme of The windling wing using مس لا الناس عنها الحينال والتي تعلى وmbo لهذا البروسية enzyme Cyprod () The prise with I P) Ja cil cie out in derest, engre CyPzet in a lille Goding for yPzca) genetic polymorphism Cooling for CyPeca dic coits a coding for CyPeca sice bilists. até à gou entyme zieples 4 structure of gene in . citis ontactive isicienzyme of its & Ogin não gene product un structure is sie to المالي الله فيلدفاح الجنبية على آقلي لغارة الدواد الخلقة عن بعضادي witing (Keels (18)

theraputicetted inder is alor of the wist is act wise Use single (sing lugh with single of is The strife of gradie warden that influence theraputre effect géré lais Prot Passe de la cot cet cés in lie e there valuations and all great that coule for down l'ip alle que enzyme II all Gist is ile to Toxxity at We A.E de des sio me in the contract years and place with the second the second * و على هذا الدُّساس فيسبول لم في البروتين التي لها علا في الدُّول transportes r targets receptors de · cités responéses ut ¿ léstipl up a 1 1 8 to 1 1 00 2650 2 Normy 15 10 as he while the note of the control of the The series the colony for protein as I in a little product The city leles de , eles a cit & (the superior of the contract of the I real to gire to manital all are little the and the series in the series of puter - s poly The fee Copy for him is a like radigo . So the copy of the 1 LEVEL THE EVER CHE STORY OF THE PARTY OF THE 1 the farbory with the transfer (19)

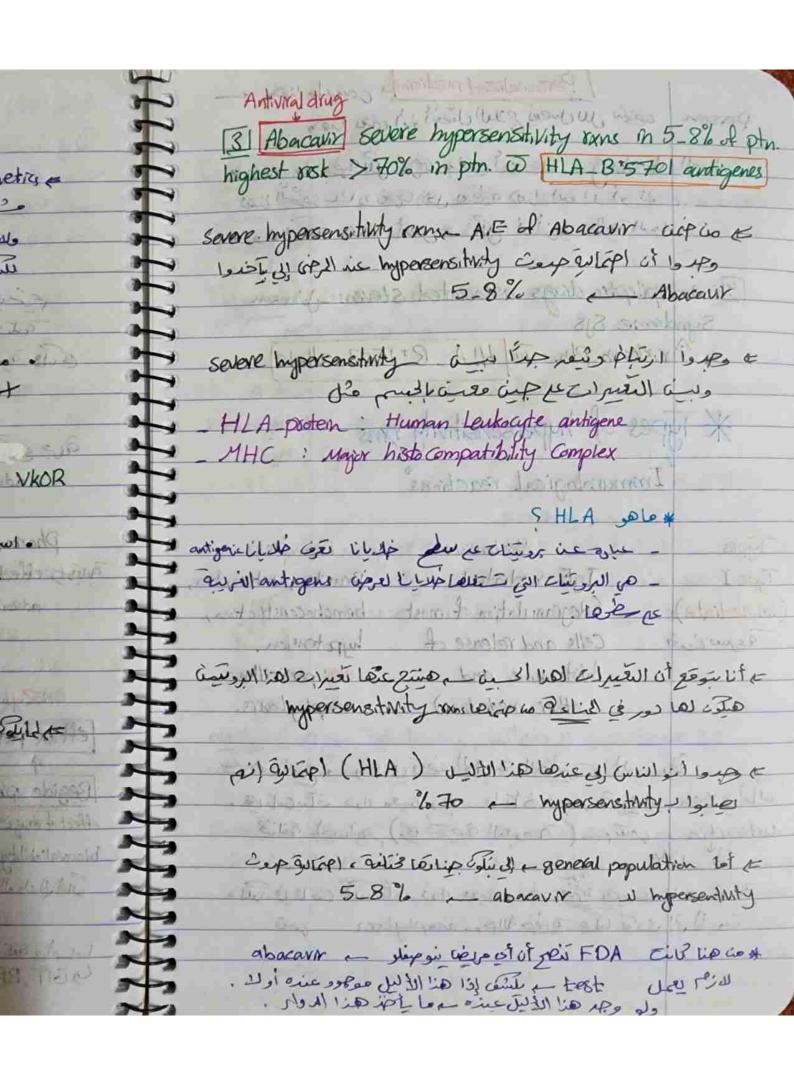
(5) 5,413 => tactors affecting susceptibility to ADR's (200 The study of genetic variation that influence an individual response to drugs. These variations include genes that code for drug transporters, metalsolizing enzymes and drug receptors De ill anist de coul genete makupion, u vill plelles = المراج عليمة للبنائ بالأدواج ؟! receptors rentymass. Coding for pretential genetic polymorphone co genetics & 200 m viz cixi lina of wear is all is Coding for protein be if ind one product of lize of 164 - abe 24, u cet3 (إلى هو الهويدة) على رُحَاف رجوة مداكت لدّخر de to and (2) pp (2) pm 62 100 CyPzag e coding for CyPy50 ing is Felse dill Jun 25 to Coding for Cypzag pretrine Cypzag cist i a worth out wie and out The Ip | 300 (Estia) (CYP209 & isoentyme ! id) in 31 lie 3) dista product SWL

will activity could dest de de processiones a company of the se all a the Declary March 16 will show المراءة الم الفي تعن المريخ الدورة؟ - Ilice [] could metabolism laures 4 9 0 mil aits coloral due is effect to will all eight activity one is as as الجهة الدعيثارة - عابيعي فعالية विद्र ए पर्मियों दं भी activity के हें। adverse effect che Man 1. The Pharmacogenetics quit, effect flangs as genetic air effect ausse adverse effects of drugge leine is a suit cesus is a format a distribution of the sent out of the enzymes receptors or targets

efflex protein transporters parteins

Occident transporters parteins Begide protein, Albumin vis. The state San San Color effect of drugs is was a * هذا البوسة الوكانة لأسبه عالية للنفا تؤرعي biogvaliability مد يا as des bloavallbility & lies متؤثرعم رخوك الدواء إلى أمان or slow of the cities offlex به لوثانا نمينا ليرة به BBB باللا ه موجود بأمالن مختلفة في أجسامنا وخول الدوار إلى 888 هيفل. GGT, BBB

31 * Examples of pharmacogenetics high use pleso pharmacogenetics = genetic polymorphism, in Elexistica? Severe عله كل الله وي عارفين البروسينات التي مؤكر عليها isoenzymes isoenzymes - History world wilder of Pail Minist Variations in Cypyso Cypzon The antitate the start less still as the sevene CyPrea - in 1 Grap - Testes a visited 2 Variations in VKORC, gene -> Coding for vitamin k epoxide reductase VKOR (wartown therapy) الله الحبيث من من الله البروند في VKOR antigerical * VKORCI gene ___ , Coding for VKORG protein الغريبه 15 warform 1 otols 02. vit k veductase enzyme circular since إِي سِيمُل عليه الوار فرين a replication genetic varietions vice of 12 (is) الكان من المعالم المعالم المعالم المعالم المعالم على المعالم على المعالم المعا نيخ للوارخرين senstivly مراد الله المرادة الله المرادة West to a polisionald Tsenstruty -> Teffat The last of the Book of the last all all all all a 6 I sensitivity , Vellect com difficulty of the a 988. TOW , U



I Personalized medicine can be into Person ces mulier gull diest et vier l'ins العالم ما معلى الرض مبلى أن علما وملاعط للحيارة العاد أو لا ، وما الرعان منى هد بعظمه هذا المعاد أو لا ، [4] Antiepileptic drugs associated stevens Johnson Syndrome SJS > Trisks in Ptn W HLA - B+1502 allele * Types of hypersensitivity rms Immunological reactions Types Mechanisms I Examples Type I IgE modiated Pruvitis, urticartia, (immediate) (degranulation of mast bronchoconstriction, desurción Cells and release of hypotension. histomne and e.g. penicillin other mediators) anaphylaxis. ے هذا النوع مذ وقع في نعف الحالاح الفطرة و الب عِنه . في ناس ساف دوا معين و بعد ما تأخده بسرعة بيصير ماعه في أمالن witartia (me (appellage 5)) solust adis ale som وللنا في ناس علن تأخ دوا، وون و بعد عبرة تصريمنها مسارية 2, 11 3; 55 We original anaphylaxis con with the dant - y which fell will by a street and lett

2 10 61,20 -20 -20 - 182 20 1/4 1/2

> Mechanism of type I IgE ~ antibody jest ou miller des allergen so soul te En la activation laker to wil B-cells & Tile IgE wie Lell [TH-cell] - Lemphayte to god activation was End set COT To be (extended to the parties of the control of THE CELL + type I when I seil a cation election Ticells THE LOUR THE CELL N activitation rue UNIX B-cell 1 rest Activation of The cells and IgE switching in B cells immunegabulins it adist Classes to is invested IgM, IgA, IgG, IgE, IgD class gives B-all to Es of 4 Switching , rowed & IgE west of B cell & B cell dost of Top Give of B cell sie sur ! immunoglablin N Class sur 4) ou * هزا الجزء هو إلى اكدر mast cell as zer. Ige low, out ops if shall mais Ige + an alcasi porto Ide and receptor of Ide reper in in نوع class (هوالاعر). inso les cele IgE lese mast cell م نعنما رجم mest lie will * and sensitized an sup agout ino موجودة بأماكن مختلفة علمة المرة الأولى ما الصل وثم و للنالونعرف موه كاينة والتي تتحفز برجنو him thell - Ris builing موجوده بالمالة قبلغة كان هناك (مكلامات به المعمد (طلا المتلان بعد receptor الموجود على سطعها) عند المناسب مرهذا يفسر لين في ناس في الكافي مناهزا النوكين الحاسمة وناس لا

15 Second exposure should wied a st copies co good of custo * mast cell deune IgE , but a cint er del viere i wil by P'SI (Cross linking) Ties auto auto bus Jaco e mast cell il signal oil care to Total historme de mast cell dels 3) granuls vi aliza) degranulation المعترها نظع لبرا وبعدها نظم عنه تأثيرالالاستامين) lettep if mast cell clie in a cing chip degranulation area sonatization penicillus hypersensiturgiam penicillus consit لعام معلوا testing اعنه أخذه the Bank mypersensitivity is a wind and with the sensitivity 77 Faco Und Brighton, everal Dot regal this train in the star was the surprise and the contraction in mal con the form of the first sent sent of the contract 0 1 in it there as I this on all mes has trained help one and the winder to be to the age 768 -1 Walled Relient The said of the sa

THE SHE STORY METERS IN Type II IgGard Complement Hemolytic anemia (Cytoloxic) binding to RBCs or Thombocytopenia PIHHs. manageg - Cytotoxic T-cells lyse cephalosporin induced the cell. Pully come is still dopace Type II , en il till , To actual de discutatoric , com a 6 PI+1ts of RBCs Firs, in the state of th Type I ast we am homolytic anomapie, by ste ist desir quiete * أخد ا دوار على هذا الدواء أو على المطعلم معده مرتبط بيروسال cujell antigen il adsorption de RBCs pero il Ture cu's put RBCs recipio immune system stuy - leseures an antigens is bit me antibodies jus stills + Antibody - antigen interaction 7 des ile cantigen is antibody plustaines for Ly Antibody dependance cell hyser and emogrape Ly by complement proteins and phagocytesis membrane attack complex antigen lesew as y) RBG sen e) ci's cije phagocyte Il a vije lo lier - opsontation & phagocytosis lover opson Tetra clo itile (dut

Lyses in RBG , sper and all the Type and lamply the themply to a Opt Hemolytic anomia / Dis point K - Insombocytopenia - HIII في ليتر أدوق على سب عنه الحالة من أسعرها Cephalosporm, 11-11 Type III Drug-Iz G or IgM Coltaneous vascultis Complexes attracting glumerulonephritis (immune macrophages and -Complex) Complement antibody repolition activation. antigen Complex * Type I, II, III my antibodies (B-cells is cus antigen I med que cése = d'ilent des complex jews antigen , bis antibody cisil will JA BUSE Stulle in soluble on complex lips (oile is pulcès de lu de la legel to datherly dependence cell bythe co 301 des logies , complement protens is a fu less , inflammation new, inflammatory responses sur case vasculitis, blood ressel clearly over will phonological terms of anisitalization of the

e le list mand book legec us / & lessel parts agus. 181 الإدر ع دلة ع الم glumerulonephritis - glumerulate 23 200 21 2,40 d. The Complex problem to 1. 20 days Coetameous vasculitis / DEs point 2 glumerulonephritis - Serum sickness mg IV autilier jetic des. ملون معوب د المالاله ع و ارتفاع درج الحرارة ، والم المفاعل cultis Vi get 10 1 15 Serum sickness i com 12 10 antitatances serum siles y 950 ils ose Tile Ust visi تعدها الدَّنوا على الحصل بعد أخد ليرما الأرور المختر Coantifetanus serum my IV * Type I , II , III * II homoral immune rixus dep in mediated eve cie (antibodies pie pure (a comi) COAD A MANAGER OF A PROPERTY OF THE CAPE de la marcia del marcia de la marcia del la marcia del la marcia del la marcia de la marcia del la marcia de la marcia del la marcia de la marcia del la m حيد زهيد في وسيا مسترول و Light warmen of some day system and the or white water of the

to the board hard Board - to the a de a se Antigen presentation w Type IV major histocomportability Occur after (delayed type)
or _____ (Cell mediated) Complex protein to 7-20 days MHC Tcelle, cytoknes and E.g inflammatory medicated steven johnson antibody a 0 3 % velace syndrome the work is a lively con to the for the product i in y leinpiral is a aux as jit at Type IV ~ ما الما بعمرتهما و ١١٤١١ -cell mediated cytolysis Delayed type hypersensitivity MHC + HLA GE de Liate. CD\$ 150 as present of antiger ? Will petermin مرتبط عم الخلية إلى عم مطخا و في خلام اسما ل antige lot 16 Antigen presenting cell (APC) (Re) (immune 2) gules (visit of v cell killing immune cell - phagocytes , il (APC) antigen - present 20/ 21 will to to inflammatory les es response 15 lest re antigentes low 02 1 * عبدان سنه السم أنوي شي غرب APC ex: phagocyte mlammetin cius celeta civil antigen cuést well a closip cup TH cells - CDy jésilpur ~ inflammation cytokine jus

MHC wie HLA leutocyte & co ~ ab 12 11 it be det wing و عدها المت عوا أنو عوجود الخلط الصب الله خرى م MHC with the paper of the party and MHC, HLA de in all live a chipe all the antigen to citise B HIA of cho cies (lest) as antigen que - chèc عنك على لوى عنك قبل لعلمية الله ، لا مو إلى هو الي هرمنط ر معهمه hypersensitusty rans me stir uso obtail of we (shall) CDy ~ jest let antigen aid læst levic e En Egtokines, inflammation (Toxic T-cell) histore Blanchaped of san sale Es â, by slly co je 51 juic T-cell mediated cytolysis immune cells and MHC de la les es superul suivil antigen ciel et met l'ils (نفري الذلية في طبية بهد) ، رفل دواء للأجف على العالمين مع برديس تعين و killing - all damage - CD8+ is with the surgent will sup in the sent of and a series of a series with the series of the series o Desilio com 3/2 (antact dermatitis) / Dies Dutt (2) lée a visi le axuplais nes cut vize.

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Steven johnson syndrome

islesée > Maculopapular erruptions zisies Préprie lépée > liéphi > Interstitue rephritis. mes acité known rejery as agriculture, a strain of the strain of the strain * Adverse drug reactions (11 al) at Talling as pharmedogical and stall any Drug Class Side effect mechanism

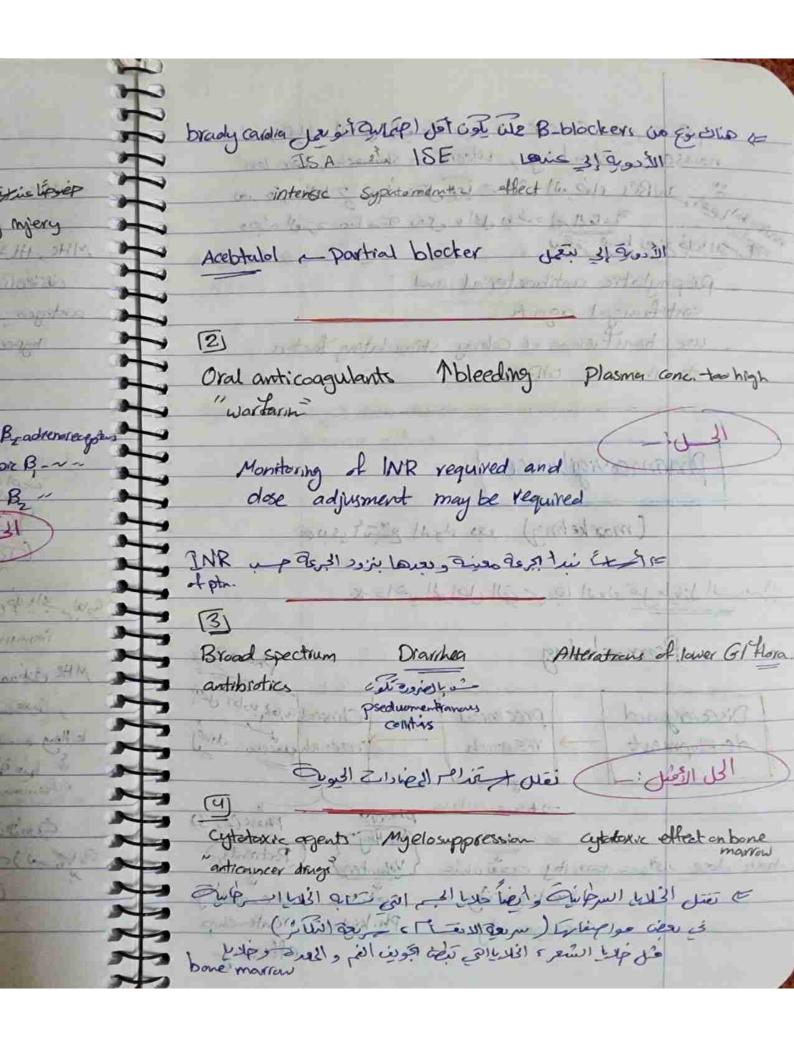
Drug Class Side effect mechanism

B-blockers Cold extremitis any Antongonism of peripheral By address express

B-blockers Condition of Chronotropic B-~

Condition Brady Cardin ~ ~ Chronotropic B -~ Cardine
Branchospasm ~ ~ N branchial Bz Selective B-blackerstele non-selective Bblacking and selective Bblacking and s Vasadilator love of B-blocker Co vier - vile 4 nebiveled Fig dute les es [Xand B_blockers] Lieut,

Ly Carvidolol, pranprolol • 0 Liest trans Jes We broady cardia 97 Selective or non selective B blocker -* dose go de la /31 -



ene se concer simes of will all of nausea, vomiting, wheers in stomach, have loss بعد عنرة العلاج سَدُ نعل تريات الديم السيضاء DBCu العالم الم وهذه العزيد مناعبه بعلى والحل يعطوه إبراليناع المرابي المرابية مناعبة والمرابية المرابية والمرابية المرابية ال prophylatric antibacterial and antifungal agents use transtusions or colony-stimulating factors to merease WRCs Pharmacovigilance | 111 marketing) use (marketing) * عاهي المراعل التي يربها الدواء عَبل ما ينزل السومر؟! Premarketing Climal ajet, us for del Discovery and preclinical development research =) tissue caltures phaseus Phase (2, 3) animals healthy Patrents toxic dose is an toxicity cease chie (Volunteer) , texatogenicity suplicine dose activity Carcinogenicity Ph. kinthis relationship efficacy at the region of the resident

Approval Post marketing marketing research. Premarketing ___ Decree of the said of the said of the said que jeu tests is de approval sot shall be is to Clinical trials with effect is tobe c - على أخاريه سين أدور تاية عَلَنَ أَعَلَ وَرَالَ فَنَافَةً عَانَ أَسِعِ المواء مِنَ نَاعِ المواء مِن نَاعِرَةً Adverse effort with properties the same and the property of the state of the se They but have the or the of he to the plant have the ALL THE BLA THE WHOLE SEVEL OR I SUBLICE IN of the critical and the properties and the same Fredericke value for strategical the season of the sea the state of the particular and the state of = 120 mil what mil a me will take a 4 5 miles I WATER TO BE STORESTER TO THE STORES

(6) sid3 * pharmacovigilance is الناس Premarketing Premarketing Emplement -Discovery and preclinical Clinical Approval Post
development research research and marketing
marketing research Con واد مدين لعد ما ينزل الدواد عم المراع قبل ما ينزل الدواد عم الدوه اوسآضوا pharmocovigilance postmarketing 0° 0° * aciell ion resourch ist & research to sit " detection 1 لفعه رحرى بعد ماينزل الدواد عم البواى عم الروم Ed 2 mbul 262 * Phar كنعى معد ملالدوا وينزل لروم Pharmacovigilance of * Lim ع لت م لير من A.E لير من الله دوية شفاعا بعد عائزل الدواء عم الروم ؟ 66 premarketing use is practolel as with 12 543 21 6 profices like rashes de sil lé 21) cire en l'es 66 . irreversible billindness de il i - Il 3 N 190 26 ser De la limitation lie 03/0 9 Sh न अर्थ रहे अ. तर् होड़ हका क्ष्प की खेत ने के 6 . preelinital research is six genetic voriations in 11 con ite a variations eight Figs coline detection of A.Eyst not chie & religer A.E usis pt state while on the region prednical is corpe of the commen in a AE To Be delanical is corpe to we are considered as selected

الغروف التي سترفيها أكن الدواء بعد وmarketing معانيات Clinical trials reserved as a continue competent disease or condition climical 30 الم المو المنه مبأخدوا أموركي عنان اجنابيناندر ما تمير دواء معين ting a researchers Jain Lipst to like it dolon h - لن في الطبعة الصيعية لدر تما المعاممالمون هيك ripertuly reportension is relief the 共 migratery a Trice - e's Eli sing la si le il en l'al portension الدوا (e) Al dis, hypertension sles as just so of wie Ful gent DOT asi ADRI aire per sil Fit Tipe detection tellai view lie ADRs (21) a - also chine -عبل عاين الدواد الودر، من هذا بيتي المعيد أدن ويب -صاحة الدورة بعد طائتزل الومر وهذا عاسمي ري Pharmacovigilance * Limitations of premarketing Clinical trials. 1 U Size of the ptn. population studied. × P 2 Narrow population often not providing sufficient data and had said him we in the on Special groups (3) Naviow indications Studied (9) Short duration 1 AND AND THE REAL PROPERTY OF THE PARTY OF TH 7 to a lotter by thousally is so that and to track there was the wind the same to the 2

nee. Pharmacovigilance us postmarketing 2 110 War & * Pharmacovigilance is the study of marketed drugs under the practical conditions of clinical use منا لوم in large communities, ⇒ It's concerned w the: क्रांति - Detection _ Assessment Prevention of ADRs Quit (ic) of is shall galled research their cite post marketing it. ADRS GROWG TOW * Pharmacovigilance methods * Spantaneous reporting systems assesser م الجهارة العاسية المعنية بسلامة و أحس الدواء عثلا FOA في أحريثاً ع Blabson de cullère che est à formulas loubs 7501 3/12 WHO G. Community, hospital لوستاموا مربعة و ساوا أمو عنه مسته معنه مربط بمرتدام الدوار ナ Tis are destaire (aste a' dap) ADRI (i) Te, ملتوا متربر هذا الحصوص. ع من مقصره عم الأربية المبيدة التي تنزل على الله وامم ، يمان أي دواء وعن هذا يتني ميزيقا ، من فهداها علن سَعِي عم ADRs الأروق القريمة ع مِلَ الْصِيلِي والْصِيبَ والْمِيْ يعلى هذا الْعَرِي عبدها بِمُ اِحْمَدِهِ الْصِيلَ بِرُوحِ الْمُ الْحَمَدِة النقاري بتروح للاهائ الرقاب حثلاث المربي ببروح الى ADA النقاري بتروح الله ADA المربية ببروح الله ADA المربية بالمربية المربية ا DE -250

aper ste 2 th ines soo col repud & treel abor in FOA a suspected A.E. i aires A.E as م FDA م بستري الدواء من النوم و بعدها شطال بارج الدواء مرابع اعرفة على ما مجاله عن الدواء ولا موية ؟! ا على الله على الله على الله والم على الله والم مع على الله والم معالوم avice de circ adint 6/2 que probation che cie si dag and the la Min ADRs 1964 ع إذا أنب أنو الدواء بركة عالله علاقة بـ ADR م علن يرجع الدواركاي للموم * أغلب الأدوية التي تم محمها في السؤل الأخيرة ، تم محمها رهذه auel 1 ्राच्या विधिष्ट क्लें विकाद formula si ain to e of the real col to the assessment and will be to copy copy & assessement i let j es estatel of i are still a efect it is the soften Yellow and scheme in UK / agiell ein is with Sportaneous reporting systems. => Collect data about Suspected ADRs in a central Database. => Cases of Suspected ADRs accumulate through reports 1 Submitted Spontaneously by people who make a Connection between a drug and a suspected event. => Examples: Yellow cavd Scheme in the Uk. ADR monitoring card is like is BNF, British National Formulary لع موجود عند لل العاملي الحاجه على 6 أشعر بغيره و اجسواهم جدید ببلاش طبعاً کی لع موجود مع لی جسران وای طبیق واقعی محرف فی بریطانیا

Legezi le un a BNF joi le 129Per yellow Cord scheme + मरेटे प्रके हि है कि का पर्न के मिल के कि के मिल के कि के على الدرسانة / ما عمل مد كالعمل مد كالعمل من الم عالم الله عمل ال التقصيل ، موالله موالي بالمنعاة والعام الحراك Ty (patch no. of Tie Tupe close city Pis) ais ر عليم على نعيم لهذه الحالدة * Advantages =) Cheap method > Follows the product throughout its life => Can provide information about OTC drugs and herbal medicine as well show used ADRs wie autoust wit will ale (FDA is appendist Till herbal i OTC , i prescribed drugs CB وهذه الطريعة على بنقد الجع وعلومات عنا أدوق قديمة.) Important form of evidence leading to drug withdrawal. والطريقة الدكر بليمدافيًا محب الدوق # Disadvantages: a collect the object superior to delles a => Passive System: rely on the ability of the health come professional to recognise possible ADRs 3012 we dia? 80 de joir (de un di cesal re view o للخلوا في عنده - ينه ، وريضوا هنه الحد "لله بدوار عدين عالى مناحرل) passive at an is ele ele ele eleport cul de colo ele > Inability to quantify the risk (incidence of reactions) -

Published Lewis alipa all in crose # 2 Published Case reports > The first suspicion of unpredictable or less common ADR usually comes from case reports with an instant of the first for , limitations: high Standards of investigations may be needed by some journals, time it takes to be published 5 auditables elect * Systematic review and meta analysis

Case_control studies

Cohort Studies Published case report So will the SE Thing a Seas be the Formant Sonot sell along 15 Published case report Give 327 of eye aly ane die as health are practitioner lite و تعاملت معما ، وجد كست تعري المول عنها وجود معاللة في عدم الل موطفاح العالم (عمله عن الحالة و المعنى الحالة و عدين) مان إذا إلها علاقة. ADR و بعدها عثرة التقرير. the rail at his to the main to a rooffing a sound trage register علن يعلوا بقرى عن علية جراجية أول فره الحرافي عزه and affect and the state of the state of 18 CA Salve Thalidomide tragedy

and series

Case series 1 م عد الله الم بعداج وعد كري كما كري كلا حرى كلا حرى ~ -

transport on in this batilister 3 Cohort Studies Prospectivestudies that monitor a large group of ptn. taking a particular drug over a period of time: madel by save journets, take it takes to be published → Usually they compare the incidence of a Obs Particular ADE in two groups of ptn. those taking the drug of interest and a matched راجي group not using the drug Cohort and Case Control Studies risk factor of disease Twel who sees the line of a area mis a sole of in is com de sica for ADRs , Dest Testes duly real of secretary is to be and you to the elysis (Cohort and case control studies) apply alois o're Confirmation or Suspected ADRs + & dee of raje's syndrome , Tous of war sil in the while of the FDA Zupsidlysted Wished for published case report justice diabe suspected ADRs established as withing Case_Control Studies, I Cohort Studies le) dei stul Statin AL SE WE DE LENS 31, LE CONT 19 Cohort studies and Case-control in rejet 2 - 30 A THE MENT OF THE PARTY OF THE Statu Zi willowand

=> Cohort Studies Generally, are prospective studies The clippe will and will confer in a cohort roup cio le d'a s' research les cines sillie men cohort studies . Cohort Studies see research est cohort all 71 × Observational research a course aire Zieplante Cohort studies it's not interventional ? red (3) is is as researched group at as researcher it cies لا يعظى ولا يآمِد. عُلاً بني أدرج تأثير دواد معين عند جوعة هية مالناجى - med le vali e seun come de como l'ule e ila el l'est the feet of the state of the st ع نفتها أن المنا ما لين لدواد معين أله بعل ADR - موجود ا Exposed group New lis Pir is it of is in 600 مرجوف كما عاير زميم بنف المواجفاح ونق الأفراق وللن عاب أنبعوا إلى 3 diabetagenic effect i hyperglycemiaci - Statms / Ulio a ب وف الناس إلى موجوعام status و بشوى الناس إلى زيم Startus riego la gravalla de celos de la sia pris و نتيعم عدى كا أشهر ، بدي أنتبعم من ناصرة الشيء إليانا stata Zipi, hyperghyana leic Jepy Culisti 6,20 len Statu Zipt Lo, hyperglycemia ice dep y will an in leights hypogyadoistop statu jet zil stopilai Zuos

Cohort studies Colling Hall) exposure Disease No disease No disease Study begins Time exposed group un exposed group Legisland in Lyng prospective studies low Cohort studies Jugist s'no cilia المون على المون المون المون المون عن من المون المون عن المون المو ing quantification of 8151 Les se بعدر العرف منه الناس إلى أجن المعاء وجمادي معها عا ADA ADP3 Carpain gostine Styl statur per la cia statur perglypentor cire de la cire con con la cire de la c we de cattle wit DDRs and the the said will the of the pile of the The same of the same of the sales car it in some supposed first whole -The second of the second of the second was the first the state of the first of

[4] Case _ Control Studies => Compare the extent of drug usage in 2 groups of ptn . A group which has experienced the adverse event. 7 · 11 11 Not 11 N N => Examples of associated which have been established by the Studies: · Aspirih and reye's syndrome · Maternal diethylstilboestol and Vaginal adeno carcinoma in the female offspring. Case - control Studies __ interventional مع سال بالنارى الله عنهم الم فيه و فارنم بالناس إلى عنه عن الم الناس الله عنه عنه عن الم الناس الله عنه عنه عنه عنه الم Teye's syndrome / the Riche was whatin sie uplained the sit of diep til as diep wayer syndrome vage's syndrome ١٥ رية ع ليف حِلوا من هذا الله م و عدها عالموا ؟! ROLLS OF THE CHAT IN CT. Published care report to go is up T, inte de la reges syndienes. of Case constrol studies de Would 1 1 weis apo es diepostatele cire a Case a regels syndrome Control en rege's syndemlæis up los ural infection pais singitated 1

reye's syndrome sing signed with syndrome ways's syndrome Louis of or will in word I think in all lie? I - ages syndrame

This is a syndrame of the control of the contro Co is highly associated to reye's syndrome 15 retrospective justo 14 onset of study unexposed O Cases Exposed. O Quality of the little of the litt Control unexposed Di 0 the was in what the second The state of the s 16 to 10 al my and order force and select an extending their

Effective in confirming suspicion about an ADEs a Thing ching and pathological chick of the event THE TOTAL SECTION OF THE PARTY TO SELECTION A TELL SECTION OF STATE DOUBLE I SECTION AS SATE . F Tracking when the is possible doug when he were in * Disadvantages Zilles JE dipie 2 lestels les jul mon bias git अंदेश की राही देश है। दार्वा अवंदेश की देश की एक शहर की ما يوا ما توا ما توا المان على الريق عا المان على المواعد المواعد إواعداً المان على المريق عا المان على المواعداً المان على المريق عا المان على المواعداً المان على ا الونارية المال المالية the day we don't prote with it of great to property -> quantification of risk just a sue I hartened theory by direct whom court at revel 1) Rely on good record keeping about drug use. @ Not able to detect previously unsuspected ADRs

(Augmented pharmacological Type A en ADROCLIST & * Roles of health care professionals - ADR Considering the following, shall risting and assessing ADRs in clinical practice.

Considering the following, shall risting and the event

The temporal Rs bet. The drug and the event 2 -s The Clinical and pathological Chich of the event 3 -> Concurrent disease -> ADPs cons GRAI GO GET at Individe 4 -> Concomtant drug use as well of intradiction is in the 5 - The Pharmacological plansibility to get with the do got you and # 6 - txisting intermetrus in published drug information resources 7 - De Challenge my is de cies ADR descript i his sloul cies of 8_ Re-Challengensius III es is is in tome cit soul pirt ept 0 0 -2 Prevent ADRS no Counseling 0 1 -> Good Hx taking. -Z - Minimizing the use of drugs known to be of serious 0 0 effect individualization of therapy 3 _____, Regular review of drugs 4 _ Improved Sharing of information between ptn. and professional and among professionals. 5 5 - Monitoring therapy: by direct measurement of levels. physiologic markers or through Clinical manifestations 9-8 9 6 , Good Ptn. Counseling 5 -

(7) orpl3 * Drug_induced 8kin reactions 3 * Drug eruptions in the Skin tice I م التغييرات التي ومدت مع الحلد مADR معالم 30% of ADRs affecting the Skin العلا o just our elevis reaction on Skin ouis upais Bo2 .* Type A __ slow pharmacological effect as it of the ADR &

To much common type of ADRs allergic drug reaction Lie will & allergy will with it & ADRs of Skin ac util 12 % MOA lesmés we i unt allergy i'ds a' Type IV of Type I by odi - allergy ECB 13/ -1 mediated by allegar a so will as drug emptions of ADRs word of 1 1 * Examples of hypersenstivity types: on skin -- curticaria my this is skin reaction -(upet - anaphylaxis, us) costi we less six is its also systematre affecting other parts of the body -Ly mespiratory system b blood withour out brook (1) Fogword World (+) 1 transfer field 12) - angioedema - hemolytic anemia

Thrombo cytopenia -2 Cotion affecting on skin cotto allergic drug reaction as Affect affecting on skin a?

affecting the skin a ADRs wiste * سؤال اورك ني الحال العمل من skin inviving allergie cliet was Allergic reaction * ADRs in the skin 7 1 Monallergic reaction mild reactions . Skindrug reaction with the life threating wie sip is will * Mild reactions / not like threating mild reaction
II Unticaria and angioedema my anaphylaxis in it tes Enythernatous emptions (exanthems) urt 131 Photosensitivity CFT Proviasiform eruption Es Acnetorn eruption form = resembling -an's (6) Fixed drug emptres How Changes (8) Nail Changes 191 Pigmentary Change [10] Xerosis us) cities [11] Contact demartities Hand foot reactions come of anticarcer drugs

7	
77	* Severe reactions / Life threatening
	[] Stevens Johnson Syndrome and toxic epidermal
777	necrolysis.
11	and the set the set of the set of the set of the set of the second to got
7	2 Drug reaction with Cosinophilia and Systemic
1111	Symptems
7	11 M. Maria Company of the Maria Company of the State
7	Mild reactions 1 painting
	[1] Urticaria and angivedema
-	urticaria is anziolemacines i just quidelines cier is
11111111	original click resultate type I in our in
	Chichof wrticing
-	=> Urticaria (hives): describes the appearance of red, tring
111	wheals on the skin. Allergic or not allergic
-	- Justicaria peie regent liseas cula dispetilio sula
-	في أمالًا قم الحبر .
5	ACE interprise mediated by Allia (Christylana)
-	urticaria - itchy doing applican -
	wrthering a die als a sil
-	The start amoles ignes to the total of the start of the s
-9	edema gor leie « swelling leie Lesions as one : unticaria e
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3	(il al evant the my ses estions exist when de res.
-	de le celle de la
777777	Skindrug reachin Bo2 - c allergic wo wish warranter to
	alleran car estate allerante de
-	allergic and colored to the wild de side
	Type I hypersensitually

an the face. Allergic / non orlergic. Swelling of the writecure is spell to it swelling his to 218 [3] A م إلى عيرها اكدى في الوجه عالمه النمالة الى متعلى فيها الم على penarbital area de voto ci so (4) A perioral oxecons and of the angioedema of Unticavia 5 1 · anaphylaxis co signification co Let throat do cilistans out - angioedema + (6) N Larryngeal edema or tongue edema ar ways I obstruction yes stup (手) (> ACE inhibitors mediated by MeA (I bradykinin) [8] Phen 9 Qu Mild - ACE inhibitor co spisal angioadema Evice (D) R.L de Bobstruction mes all set we cals mes six with [II] 8ml 12) The the true that will be a referred Landon Col I said

+	
	Drugs Causing unticarra / angioedema (II) Antibiotics (particularly penicillins and especially when given by the parenteral route)
	Antibioties (particularly penicillins and especially when given
H	by the parenteral soute)
	TO SECURE A SECURE AND A SECURE ASSESSMENT AND ASSESSMENT ASSESSME
P	[2] Barbiturates What the standard of the stan
	(3) Angiotensin_ Converting enzyme inhibitors ACFI
	19 Angiotensin receptor blockers
	[5] levernis land to the state of out and the state
	(6) N8AIDs [],[3],[6]
	[7] Opiate analysis most common
	[8] Phenotphthalem
	9 Quinhe 19 19 19 19 19 19 19 19 19 19 19 19 19
	(16) Ritampicia
4	Tell control a constituent interest to a secure the
1	III Bullenamides
I,	The same hard of
4	[12] Throppental
1	[13] Vanconius de la
4	- San Comyon
73	was for the secondary light presentations

mild reactions (Exanthematus exaptions (exanthems) Most Common type of drug skin reactions of

May be measle - like, maculapapular or even

blistering . mocule popule ~ will resister.

Shypersensitivity type IV

Cophelosporms

Cophelospo (3) Fixed drug exuptions one or more inflammatory patches that secur at the same sites each time the ptn is exposed to the offending drug. - deep red, circular, well-demorrated patch appears
2-24 hrs after drug ingestion (2) Phe 9 Q affected areas: torso, hand, feet, face, generalia. CUI T (Ca) Ca Lauge * Trea Form lesions as consistence of untravia lei 15 fixed Even Chul Carbamatepre & fixed drug eruption and store ciero de mes of six acción soll cum si l'églés les un ais cie up love 9 9 me way for inflammatange to CI Stor we will Englisher of Le post inflammatory imperpigmentation

(hell (and armone) is a sent of a sent of the properties of the * Drugs Causing Fixed drug cruptions II Ampicilla [3] Barbiturates
[4] Dapsone
[5] Metronidazele (6) NSAIDS ~ Common Common 1 Oral Contraceptive ____ common a's

[2] Phenytien

[9] Quinche [1] Suphonamide
[1] Tetracycline
[1] Carbamazepine * Treatment of fixed drug eruptions Topical Corticosteriools , 13 styration si weight who to the inter this is a six Santier of articles I: Exemples and which there the state of the s

- Localizar (more common) (Super) - widespread (Less Common) Different mechanisms: (non allergic)

> Deposition production

Aftecting melanin production Tritis 2016 - I melanin , i aire West (- I melanin Wes , of is Hypopigmentation

Tier og Pir løj og poer jer i Pivil lio, 4 المنافع المدورة -م لا مع ما ما معدد ما 00 18 fixed drug eruption 0 • inflammation dies copies (3) fixed drug emption (3) Vit 1 16 --(١) (المروه من معا لفرة وهمزة 9-0 मिक दिन हैं के कार के कि कि कि के कि 00 90 Laly Telephone 00 Lever Adverse effects cine _ contrasterards (Cs) Think is ! 9 A.F. sti who systems of systems with all A.F. -الجولاجين للجرد، وتبعل وhinning للجد (فع) بتخرب البير) 9 ے تریا کی لفرہ ورود لعلاج مالاج معربہ 9 actie à cet de vile 2 la 1 ciencie contraceptives. -> anticancer (antibiotics): Bleomycin, anthracyclines (dexonibicin) hyperpymentation of widespread leip is New Jan.

Words Causing Skin promentation (1) Minocycline (un promentation) (2) Minocycline (un promentation) (2) Minocycline (un promentation) (3) Minocycline (un promentation) (4) Minocycline (un promentation) (4) Minocycline (un promentation) (4) Minocycline (un promentation) (5) Minocycline (un promentation) (6) Minocycline (un promentation) (7) Minocycline (un promentation)
على يرَالْم حول النم (كما هو موجع بالعددة بالدي) و Minocycline المائية منافعة المذخاص
(Z1) Amiodorione > Islue - Grey
[3] Anticonvulsants Brown
[4] Antimatorians Blue-Grey (1) Edition (1) Brown
5 B-blockers -> Brown
6 Imipramine , Blue-Grey
FI Mepacrine Blue_black
B) Methyldopa Brown
19 Oral contracepture , Brown spots/patches
[10] Phenothiazine Brown / Blue Grey will a fat Brain lost con lost con Brown (Blue Grey [11] Prosalens Brown (mainlet in poles) 317 off us!
[li] Prosalens Brown anilation seis 30 to get util
[12] Tetragelne , Blue black
13) Imatinib _ Hypo/Hyperprogrentation 5 Typosne Kinase inhibitors

5 * photosensituity * 333338 Topical preparations

Topical NSAIDs

Components of sunscreen Such as

Para aminobenzoiz acid (PABA), benzophenone. (m (A) ais -* * عه صلا) * Systemic drugs (1) (I) 1 -100 JH 9 [3] photoallergic reactions as. Phototoxic reactions 0 - Amiodarone Griseofulvin 1 _ Natidixic acid _ NSAIDs 1 . NSAIDS 0 . Sulphonamioles sye 0 - Chlorpromazine - Tetracyclines Sulphonyl wrea 0 .Thiazide dinsetics 0 * 0 at . 0 and continophe and point on hat It Will Build and Bear Book (Bull Control of the Contr 0 Witchester Black black ~ ~ entidades santa example -0 (

5 Dhotosensitivity The alevelopment of cutaneous discour as a result of the combined effects of a drug and light (mostly spectrum within the UVA and visible light range or UVB range)

sisper, — Ough cool on and cipser wie is reliable will a skin burning (26 96 1 ce) ories ered around april or ces son pris restricted of commonly son burning are crues allergy of the commonly not allergy with allergy of the Téllelele Julus liere amune system photosensituity Which Made and Top the world gogs. 8) - photosonstaty - photosonstaty * allergic photosensitivity (co2) Jost

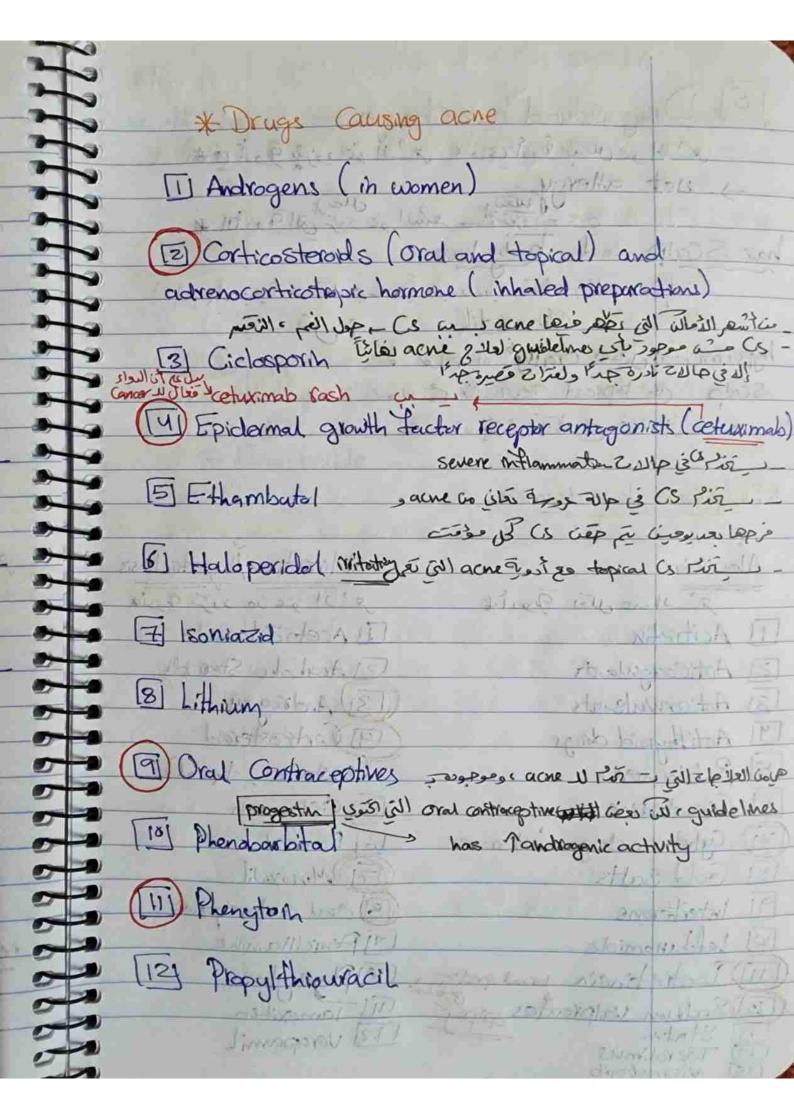
* non allergic photosensitivity (co2) Ist

"phototaxicity" agranat water 0

photosensthutg * photoallergy
- allergic photosensitut * Phototaxicity non allergic photosenetury Less Common more common Eczemadous resemble severe sun burn - may be delayed weeks after exposure Occur fow his after exposure Dose related not dose dependent Ly drug dose Contact dermatitis a Ly Light dose composited my aire wilst is blisters ... De az कांक्रक ग्रंड क्लेंग्रेस के जिंद صلوت في تفاعل سن الدواد والصور والول أخون معلى ، وجل إلى خلاط الجدوماء ل Lase Gras allergen Ul stall texicating of alop sielle (siell 20 فيدع الجد بالتالي الموار اتحل إلى cu's mis Logice promune systems 5 9 وبالكي هاعبر لهذارة Toxic form 16 is his of he injury dros Immine response E involve immune system & othe is is (Type In hyposonethyty. [8] allergic reactions represent Drug + UV Drug +UV Auto Taxic Horn of drug Drug becomes allergen Skin damage allergic reaction Fig.

Psoriasiform exuptions Drug induced provincis quell J - sissifoso las smot sties o his leaves begges if her as most common type of psoriasis (Classical) م على تظم بالسين ، الوجه ، الوقية ، على تظم بإمال فانعة ما د - المعتبرات التي اقت للجلد بين psoriasis م erythema, Skin becomes thickened, white or silvery scales. * Drugs that exacerbate psorrasis I ACE inhibitors قي 2 Antimalarials - Chloraquine, mapacrine ue. 131 Biological therapy targeting tumour necrosis factor لاع alpha (Occasionally-slightly paradoxical given that such drugs are also given to treat psorrasis) 3 هلون B. Blockers (most frequently atendal, exprendal) الدواء and propramobel) wis gisnell gulat Pist is 2 [3] Corticoterords, eng: prednisolone = Superiologications
[5] Granulogite colony Stimulating factor Ebid induction of Elicit ystens وبالنابي Autommune disease psoviasis Est we t ي فتراح به الله لوسي و فتراح المحرى الجد الله ها الح ما relapse je à aire gestilles the , psoriasis ceiz Tores a - Fire god tit, cient ies will to wet وجد حالمرف الدولد روح هذه الصرفي

* Drug included acres Acretam exaptions 15 acre (3 lossons of aux Mammatory non inflammatory - papule / // - black hades - pustule open comedones - Nodule " close comedones" 2 Gyst 14 1 0) Elilis ? o inflammatory acre lipsép, aine aic ces esté l (1) 0) (0) 0) 0) 0) 0 and the ache ce use colal ache (C) lessens die nie min sie Elesens de les fils de the stand of property temporal relationship the il air pil in 9 (and iso) fell one is seen usual acres ucue que de 40, i 30 089 : acue sus le cesu de 0 على المرك رسعا دواء عدين - بالإجامة إلى محمد عديد 0 0 بتكوكم ثقس الحجم والمستكل Airtemany of the come 0 3 7 الاس الآس التار and their thek and continued



18 Drug induced hair Changes

18 1 si de visit és si le 21 si signification de visit hav Scalp and body har Scalp Working an house orten tous of hypertrichoso de o orany ovipte . Scalp estopical rein is 0) * Drugs Cousing hair disorders 9 Hirsutism/hypertrichosis 0 *ادول مرود من غو اله 4 دورو نعل ما الشع -[] AcetaZolamide II Acitretin 0 (Z) Anabahic Steroids 2) AntiCoagulants (13) Androgan [3] Anticonvulsants [4] Antithypoid drugs 4 Contrasteraid 0 5 B-blockers (Systemic, topical) 6) Cimotidine (5) Ciclosporth 7) Cutotoxic drugs anticancer [6] DanaZel [8] Gold Salts (FI) Minoxidil 91 Interferons (8) Osal Contra ceptive! 10) Lethenomide 9) Penicillamine 0 (II) Tsofretinain prood spection (10) Phyanytoin Sadium Valproates opipay

13 Stortin

14 Tacrolimus

15 vismodegib (11) Tamaxilen 7 12 verapamil -0

Advise chief it untramed drugs (3) Total as off label les is Tolicies We oral contraceptive * Ly Androgens . بزود ينو الشعر ميل الجسم إلد خروة الرأس topical antiandrogen ting androgenical paright is it is * Finasteride mas antiandriganic activity

MOA?! District and the said the said the said Carry Mari Ton 1836 with him on To BELO L' my my louristing win 22 month 2 hours Comment bould bout of

Adverse effect of anticancer drugs (8) Tiples 191 Hand Foot Syndrome - Painful, burning orythema of the hands and feet. * Anticancer drugs.

5 Fluorouracil -doxorubich EGFR - Epidermal Growth Factor Receptor Antogonist lyrosine kinase Inhibitors (Cetuximab, erlotinib) -- Capecitabine cetuximab mash Something related hand palm and feet Curellewill is notammation, exothema over the timester to me and a trackent it Leigher will e (1/2) 23) Tele Talis col The erythema + 0 0 restille exile cell We burning sonsation , pain 0 0) 0 व्याकार के कि वेसी. 0 -> anticancer drug or causative drug post of sweat gland 0 لع و اجا عارفية في السية و العد هيئ التري العرب 0 his his with and luch lais bil sur mass his e ust shot switcher 0 Is cytotoxicity -> cells damage -> inflammation de we dryness view aggravation in wie als gest vie a 0 aggravation.

Blisters (Huid filled Lesions)

aggravation. 20 25 2 2 0

10) Drug induced Nail Changes Drugs can affect color, texture or growth. - Finger nails and the nails are affected. * التقييرات التي تكدن عم اللظافر بسب لم تغدام الدورة ععيدة > Nail pigmentation by minocycline resemble gnosis => Leukonychea by Cyclophos () see als distilation Beaus Lines bestices interruption nail growth in this faw post chemotherapy coces il believes of cycline success between the exible on your exible on your 125115- * 15 MOA 19 Leukonychea dei Cyclophos and who have to be proposed to be small and I so was anticancer drugs il cytotoxic agent i to po sixtil sic + GIT cérévil eprithetial cell Luis , e? 11 je archive many then a more wort Interestinally anticancer cyclic _ 3 weeks علاجه اليوا بعدها برتاح على العباد في العباد في العباد في العباد الم المارو نعى عزمة الحر سعد هواه ، وبند قر الحرابع ساخد ROS Z 22 paragrade VAB I The scholar 10 a to be insulation to a labelled Spirited

= Salph 150 d. / 10 11 d. / 19 /
=> Severe reations / Life threatening
[] (Stayan) (Sis) (Sis) (Sindomal)
1 Stevens Johnson Syndrome (SJS) and Toxic epidermal
(Acute bullous disorders) my Skin lesions
(Acute bullous disorders)
Blisters bullar ensignment with bullar macule papular
Blisters Blisters
bullar ensure papular
- Life threatening, mucocutaneous any hypersensitivity
- Life threatening, mucocutaneous drug hypersensitivity syndrome Characterized by blistering and epidermal slaughing
Type IV hypersensitivity reaction my debayed allorgic reactions
non specific symptoms
_ A producine of fever, malaise and Upper respiratory
tract symptoms may precede the cruption by a few days,
Involvement of the mucous membranes of the eyes,
Involvement of the mucous membranes of the eyes,
At the second se
SJS epidermal sloughing by < 10%
While in TEN sloughing is > 30%
10-30 % involvement are Labelled SJS/TEN overlap.
over lap

ī

15 TEN , SJS mer in 15 des ap Al Course in * Susceptable de SIS sout HLAB+5701 our agril epidermal 9 aird lamon of Cele Ill on lever specific, quilimit manifestations tille die Gels Il is jui nonspecific mantestations cer les est ap & soul ale Cuting (رمثيسي) prodrome con م ين الإين بر روية وقدة ما عدد بعث العرب بر وي المربي المربي المربي المربي المربي المربي المربية المربية المربية ist lest wies papular tever, flu like symptoms & nonspecific celetare posis sensitivity Jornal Slaughing المنه وظور عرفان من وجع عفدى ، تعنى و زاهام على ستم هذه الأعراف لأماح وبعدين تفلم الدعراف الرئيد على كالك Lo Skin lesions gre reactions => mucocutaneous drug hypersens.twity syndrome mucus membranes de skin lesions i litro puel replio det protory في الشفيليم و حولها ، وعلى الألق ، و العين ف وبعدها تنت و few days, med Files What eyes, 10 1 20 am lastems willing - The Bish Elle ويصرعن الريض Skin Sloughing (الجلاسسلخ ، كالله قروم) is Ch.Ch of SJS and TEN 19 AT WE WE WE THE WAS THE WAY SING IN CIR WAY epithelial protective layer vies avise usique 124 (sopsis in significant in prest still) EN mest is electrolyte, water & 25 5 al 3 - 3 3/2 aps ac bourner 3

water and delectrofte. We sepsis & devide ciendle respiratory problems infection asi wes Scars وَلَمْ عَلَى اللَّهِ عَلَى اللَّهِ اللَّهِ اللَّهِ اللَّهِ اللَّهِ اللَّهِ اللَّهِ اللَّهِ اللَّهِ اللَّ (2 Nograe of skin Sloughing a print rejult

(2 Nograe of skin Sloughing a print rejult

(2 Nograe of skin Sloughing a print rejult

(30% > 30% | 10% - 30% |

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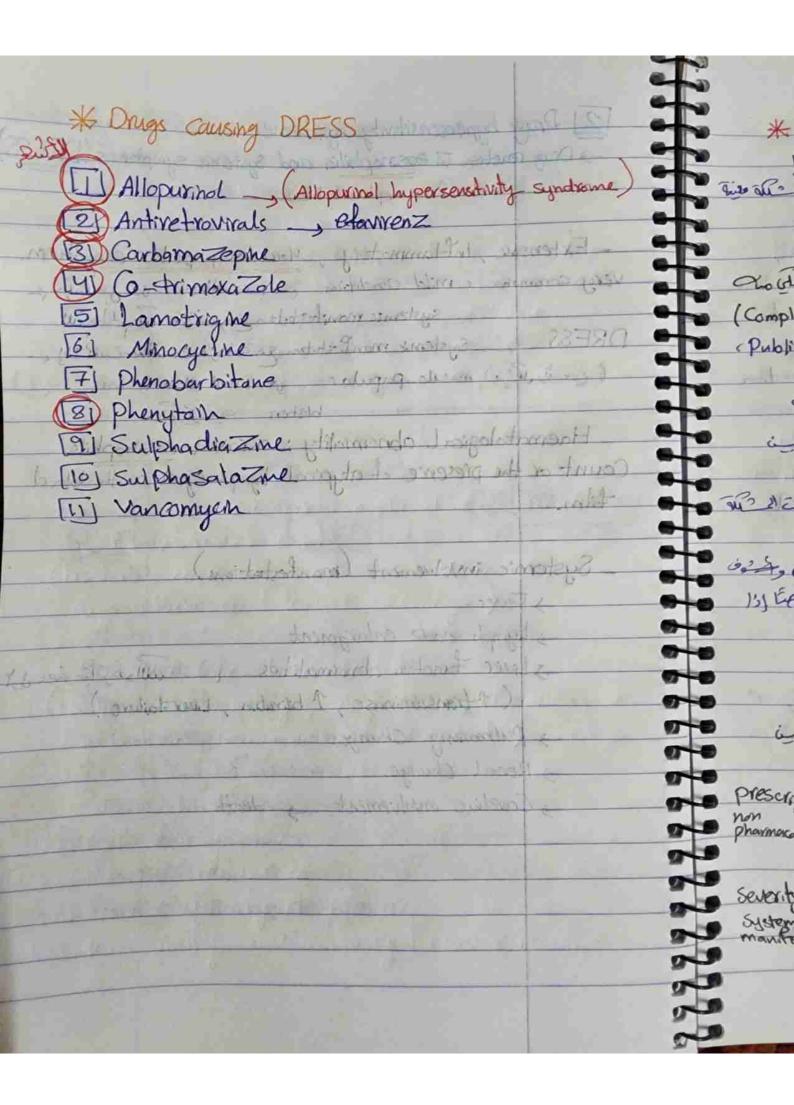
[SJS] [TEM]

[SJS] [TEM] Count 63 0) 6 0 6 0 Table of state addition to their before the * Dougs Causing SJS and IEN

[2] Carbamazepine

[3] Cotringxorable (4) Dageone 5) Gold Satt (6) Lamotrigue 7 Lettinomide 3) Phenytoin (9) NSADs (Meloxicam, Dicherae) (10) Penialling (Amprellin, Amaxicilling) (II) Phenologobital (12) Phenybuta Zone 13) Sulfordiazine (4) Sulfor Salazine (5) Tetracyclines is doxycycline 9

2 vrug hypersensitivity synatome
Torug reaction w eosinophilia and systemic symptoms (DRESS)
reosinophils in blood.
Soonach John with to
- Extensive, Inflammatory, Maculo-papular exanthem.
very common , mild condition , exanthem is joint
. Systemic manifestation 20 per jão cité de la vil
DRESS Systemic manifestation ga que le exanthenci 13/1/2/
(Guin view) maculo-papular po aviel skin lesions
bloters ascarda
- Haematological abnormality: a raised easinophils
- Haematological abnormality: a raised eosinophils Count or the presence of atypical Lymphocytes on the blood
film.
- Systemic involvement (manifestations) → Fever
→ Fever
- Lymph node enlargment
-> Liver function abnormalities , willow it is ised of
(1 transaminase, 1 bilirubin, Livertailure)
-> Pulmonary Changes
-, Renal Changes
Cordiac involvement , death
The state of the s
The state of the s



* Assessment of drug exuptions 19 assessment of adverse drug reaction Ide HCP wife منو السفادة إلى لازم بآخِدها بعين الدعتبار عدام يرفي بين مديكة مينة المعرام دواى وهين ؟! الدرم أكرى ويوهي الأدوية إلى سام ها الزيم أعرى في والدم لها التي معاى منها علامه على لون الشي إلى بيلي مه (Complications of disease) Get elice is i apil aupretiso · Published information (300 assist 2015) por lesson ولي معلومات تولير أنه هذا الدواريعل مشكة عندهذا الي ؟ (il de pharmacology lomis us an 21020 yo 1 - us 1500 pool relationship 602/ su + made of the second of the seco م يعلى De Challenge بوث إن أوقف الدواء و إذا راجة الدياء الم معناته العادواد هر بيال "اللا ، 62 4 citisted tit test is cust Re-Challenge de -13) Elever, effecal of it is see of sweeters to -Serious AE ZiB is assessment of drug expotron UET will cont ines lesion By les condition of 6 lesions de 1 و أحيم الحالة ، هل لمسطع التعامل مع الحالة بالصيدلل ؟ ؟ non pharmocologiese je tei tie 31pc cuples Zer at apies 2° 2 , (OTC ies Piry pleasetsi 2 Severity mois set all think is c Severity prot position (3) 2 ~ N. A.

=) Manage Stop -Medication Hx drug o 2) Alternative etrologies [3] Hx of the present problem Conset, progression, previous occurrence) [4] Temporal relationship blu suspected drug and --Occurrence of the symptoms. -[5] Existing information in published drug information -Serious I should by bog in You may encounter the condition in Community So:

- Urgerry of the Condition Should be determined

[I] Types/sites of lesions (blisters, mucous membranes involvement, angioedema and tongue swelling) HO MANY OF WE معومت الدواء [2] Other Clinical manifestations (Lymphadenopathy, high fever, dyspnea, or hypotension, hourseness of the throat) Civaio Goals of therapy

I Relieve Symptoms

21 Prevent recurrence doa 1-0 31 Improve quality of life

4) + morbidity and mortality for source reactions. 1 1

12 ~ =) Management of most drug _ induced skin reactions -1 in Miscois & Servious adverse reactions 13. 2 Stop the Suspected 2 drug and avoid الذوق لي سية المشكة بوقعهم للم. 4 Cross_sensitizers Antibotico iptis civilices/des too tenned a u و جار عنده کالی و دون عارفه مین رسط بوق H 1 Is this always Willied In 1 201 Contract 1 Symptomatic/ Sepsis Supportive therapy Autiliotics appropriate ??? 4 serious 2 drug eruption _ Serious Japas 2000 ~ serious e urtroaria cie ~ -Igt le's - serious assertat anaphylaxis Jev. all Mild vs Severe Systemic systemic Gelet is exanthem CBJ- manifestations -solver anticanter ر نعتم من الدعواجة التي تغير عند الحراجة patrent Counselingto avoid re-exposure documentation - very important in serious reactions that occur in hospital. and and the standard of a substance white mitigen surface as example on daily -الوحوح 7 750

intection eie sup & Cul jul aulup eie ces p ما معالج إلى مابند مله ، مثل Ego d'el cipi d'éles a cipassangulup sus . Desensitization penicilims - desensitization & Jeseph point in go al are much immune responseción auto penicilim de stail (o o Gree Mation) Just seine Charles as is the penicilla rie gre al Management of most drug induced skin reactions acrivasti *symptomatic Oral antihistamne supportive therapy lopical Steroids Systemic Steroids 1V fluids/ antibiotics/ * Mild us severe Systemic manifestation IV immunoglobulin. burning sensatetim oval antihistermine post antihist > Dose o conditions of a w, Pist Topical Corticosteraids. evidence lous 60 o untroprio 100 a good evidence house photosensitivity, i sunburn is, exanthems is tin-fixed-sum emptron 69

علام الدي الحالات المتعالم على الحالات Systemic Stereids Chronic urticaria si very severe urticaria & Tis The of the true they it autoports ale IV fluids (electrolyte)/antibiotic Co of west Wednessis 62 c SJS Gris · skih barrier oftes , skin sloughing Urticaria / santadino 1) Oral antihistamine Thirst Choice: non-sadating during the day acrivastine, cetivizine, desloratedine, fexoferradine or mizolastine, Lorestidine !!! - وال حد Terfenadine, Astemizole, non-sedating وللن عندهم بعض الم ١٤ ١١ م وهي الم ١٥ والله ١٤ والله و Tiel ever steet les antihistamine ist vérelle antihistamme as girl soe successed untreama some chronic witrowns of Dose can be increased up to 14 told the Standard if no response Tradating Tex cicles

(2) Combination of H, antagonists + H antagonists is more effective than H, antagonists alone. - Combination des potentiation of antihistamine effect by pharmacolumbre interaction Hz antagonists , intermatic inhibition of antihistamme metabolism 1 Conce of antihistamine لع للنا هذا اللك م م ليم موس عوال يزيع عند بعض الناس ولا Terip Pull is ce evidence !! Sedating antihistamme at night hydroxyzine, or promethazine July of sedating Porte bei recommendations of lulp. sedation set de ile Prict sit (10) Doxeph has both antihistamine + antiblepressant is useful for pth depressed by their Condition, 0 edin to be portation with 3 this and horse -9 (

Heet Cetivizine 10-20 Des Loradine 5 Feroferadine 10 Bilastine 20	es Standard It dose
Heat Cetivizine 10-20 Desloradine 5 Fexoferadine 10 Bilastive 20 Rupatadine 10	is the
Des Loradine 5 Fexofenadre 10 Loratadine 10 Bilastine 10 Rupatadine 10	CONTRACT
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Loratadine 10 Bilastine 20 Rupatadine 10	20
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of spectrust unbeams may apost to	80
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11:5 + quadeliner Pin 10 511:0 11 61/2:11	0.10
garde into parties of	in to
Soothing lotion w antihistamine	
Calamine lotion	
itching use will a	
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pe stant	Everte
2 Corticosteroids	ahi(i)
a wi in quel 2 mpical common - Topical contractor	red Plist
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Severe ZUIN, 3003 Fed Systemic contrasterard	10 list +
antihistamme us second Choice us a 1 = cont	Heasteroid_
Plane 1	
Mark and the state of the state	and and

Corticostevoid. - a moderate - potency topical steroid for most ptn. what is the recommended amount of the steroid to be used ?! Oral prednisone 40_60 mg/d or I mg/kg/d for Children for 5 day for Severe reactions or angio adema. Severe resistant urticaria may respond to Ciclosporm or OmaliZumab Second Choice after anthistamine -monoclonal antibodes IgE expensive discuis-Examinems / Fixed drug eruption / Photosonsitivity 63 S 1) oral antihistamine Psoriasi eczema (2) Topical Corticosteroid (3) Emollients / Cool Compresses a widryness beam burn sensation Syste 9-3 & burn sensation photosenstruty usic super is citized in Lixed drug

* Is it acceptable to continue treatment through emptions? 15 Mel is respondent to the series of the server cers so there is evised the out. suit is marker unit is top luch shell by my . cierd user of exanthem لع وهذا في عال الدواء احسن a density of dev ELINAT PONTING -> Mild Exanthems eruption - when treatment is necessary w limited alternatives. , Rationale (most exanthemotous drugs eruptions are not a precursor to sovere reactions, such as TEN. ⇒ Clinical use of topical corticosteroids? psoriasis 40 other skin condition of drug-related Eil us potency of topical orticosteroid, TIBIN, more potent TiBIN- NI Skin pertration CICIN Con ous is skin using us or More Adverse effects

Adverse effects of conticosteroids (topical)

Cutaneous wise or Systemic 1) Striae (Stretch marks) Ohyportension 2) Atrophy 2) Myperglycemia
3) Hypertrichesis 3) iatrogenic
4) Purpura
Cushing Syndrome 9 (5) Rosacea-appearing eruption is montace -1 Dhypothalamus priturbury 6) Perioral dematitis -F Telangiectasia axis suppression

8) Acneiform engition 3 osteoporosis

1) Changes in promentation via inchelia axis suppression -0 -precipe to cover reaction, sich as They --Systemic adverse effects de ile Topical CS --معوماً لو آیات به potency عاده ، ولو مختر مناه اور ای مورد این ماده) و لو مختر مناه ای ماده Revision of the states of they want sut (() (F+) (, hard should be provided to senter in tal of life like 01 01 The state of the s 1 of all steen the section work advise all to al) ركس رك 3

stimute use of dayed Orthostemids * urticaria treatment -) Oral antihistamine 4 first choice non sedating Ly if ptn. not response , dose up to 4 folds 4 Combination Hantihistamine + Hantagonist - Soothing Lotion , Calamine -, Topical Costicostoroids -15 Unticaria les 3 2 * * Are they recommended or not? > exanthem / fixed -drug eruption / photoBensitivity burning a city ace 2113] oral antihistomine Pir us sensation or Aching! J C3 UPrep indicated Topical Contracteroid fixed-drug eruption or photosenstuty of il ces in it sept of loop! we exanthem is loi Pir is still dryness destile belong ver jule Emollients desip - unticarra is Topical Controstered Plus Tiep lance endence & 1

* Clinical use of topical Corticosteroids Is per se fun as topical Corticosteroid as in en celling il 5 stol concentrates * Photosensitivity air ciero, fixed drug emption six ciero "113 Propical Conticosteroid, tipl us which ?? Pirt 2 is Get SU = How much ?? How many times ?? (frequency) -15 Potoncy is sin reill 15 topical GS & potency one is pentration the Skin This - dapical Co love got und actual To BIN 1 portency - Jos - topical CS I pontration CB LCB 1 potency . Thick add to 3 & [1 potency] more thickness see it E IV severity of considering age of ptn. 4 50 hours to be begget as wantered in heart of the section and the second

* Classification of topical Contrasteroids aine but a (ciles il cine il (mp) 4 groups - topical CS , me ainpul lip -(mild potency , very potent) (1) Mild (2) Moderate (3) potent (1) very potent Amrican (WHO = () What is up to lainer which] Jopen CP 13 defferent potency e) CF WE CS WE L different concentration

Or different Salt Forms

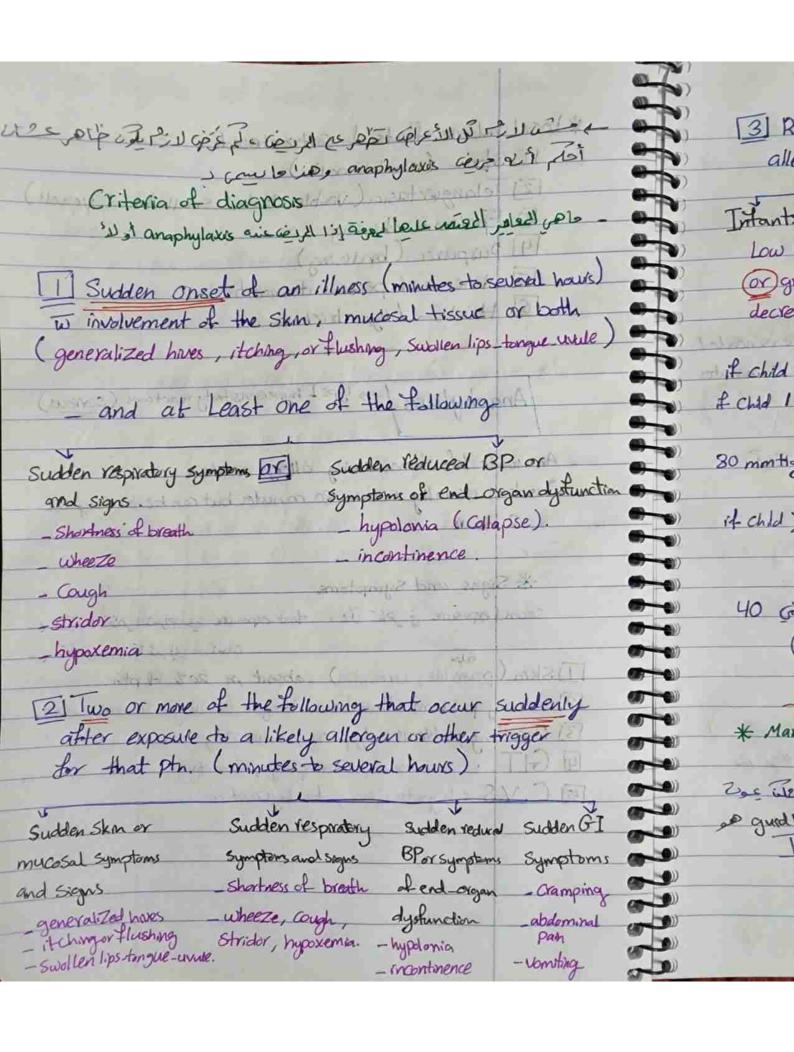
or different Formulations or different formulations get spec (8 15) potency cetis . To spec some CS Queix & 15 y groups an elevice Examples Laborer Dominate vary and 5 3 Kul wsterryes Teof 25% 2 2 2 2 2 idoark() 2 5

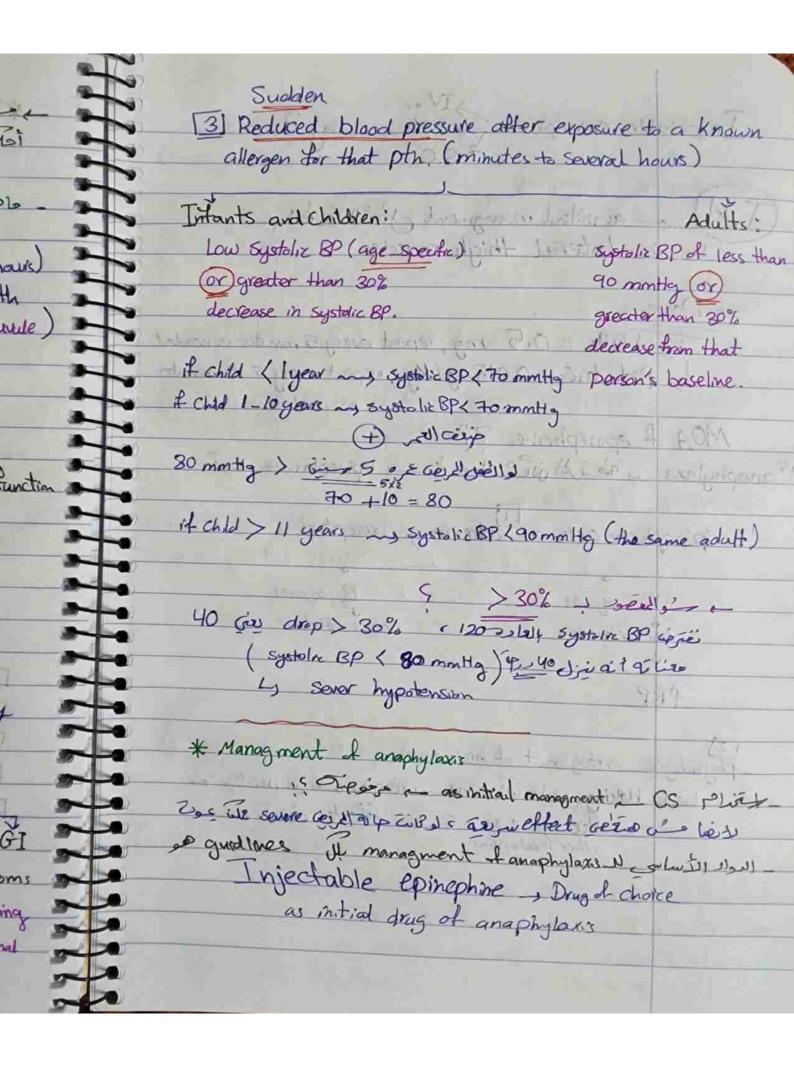
	a land		*
Uk Steroid group	Trade name	Strength	*
Hydrocortisone 0.5_25%	Hydrocortisone	Mild	2
Flucindene acetonide 0.0025%	Synalar 1:10 dilution	Mld	3
Betamethosone valerate	to make twelt !	Moderately Potent 2.5 x stronger than	<u>y</u>
Betamethasne valoate	Betrovate	2.5 x stronger than hydrocortisme potent b x stronger	5 h
Clobetusone butyrate	Eumovate	Moderate	alt
Clobetasme proprinte	Dermorate	very potent 50 x stronger	(5)
Flueindone acetoride 0.00625%	Synalay Iny delition	moderate	
Fluctroxy Cartisle 0.01251	Haelan	moderate	
Mometasue furate	Elocon	Potent	

*General Considerations for the use of topical steroids I Low strength Stessids Should be applied to delicate areas: face, gentals, flextures higher potency depital Con Tist parriasis is -2 Avoid periorbital eye Rul and butter to (tack front) 3 Higher Strength for thick areas 14 Applied no more than twee daily Potent 15) Systemic adverse effects are pronounced with use of high potency contrasteraids for more than 2 weeks a tingertip unit. the quantity in this unit is sufficient to cover an area an area the size of two adult palms. م في جداول سعرفني قدين الجية الم تعرفة من Apical CS بوجدة و عرف مطويت فقط المعرف (و م عطويت فقط المعرف) الأمان

3 Fingerti	o Unit Cl	narts for 1	adults and (Children	3	
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Area of b	odilar od	Harlis J.	TU per de	se of	-	Ports.
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losso and abdo	men (front a	forunk)	is letter in	dreath in	3	7
IS ACH A . I .	1 000 1 1-000	-V-G-V2+WK			-	1,311,3314
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One leg (from	t and back	s solut m	ant on a	Mandel 3	-	
	- 26	The second	4		=	
4 30101	To be driene	d an la	105.5	12] Sydem	-	- An
2 cuela	3_6 months	1 2 years	3-5 years	6-10 years	-	+ On
Face and neck	In I was	15	1.5	211		
	10 10 10 10 10 10 10 10 10 10 10 10 10 1	1.5	E ALL HOUSE	2.5	-	
	15 less	2	3	4.5	00	
Leg and foot Trunk (Front)	1	2	3	3.5	-	S
Trunk (back	1.5	3	3.5	5		
including buttocks)	W. T. S.	11 ()	1 seller a	See (horale)	00	III Sk
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to all the selection of	والطريق		كريسا		س	and one
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		-	A day			destardists
						A September
					2	

* Local adverse effects of Corticosterords III Strine (Stretch marks) [2] Telangiectasia (visible dilated Small blood vessels) 3) Epidermal Himning [4] Purpura (bruising)
[5] Ache and periodal dermothis [6] Hairtism / Hypertoichosis Anaphylaxis / +> Type I hypersensitivity reactions (serious) An acute life threatening allergic reaction Onset is usually within 30 minutes but can be as king as 2 hours. * Signs and Symptoms second exposure is ext. The first exposure is injected with a tile of [] Skn (prunitus, urticaria) _absent in 20% of ptn. [2] Army problems: throat and tongue swelling, hourse voice [3] Breathing problems: dyspnea, wheezing 4 GIT: nausea, Cramping, voniting [5] C. V.S: hypotension, taxhycardia in Lord grave at large of the





Injectable epipephrine SIM, why? Dose

Dose

J. Adults 1 0.5 mg, repeat every 5 minutes as needed

B. Pedratrics 1 0.015 mg | Kg, repeat every 5 minutes

as needed 5 MOA de epinephrine ?? - epinephone acts on advenorgic receptor vasoconstruction branchodilation physiologie antagenest of histamore Laste bloking pala ille hotamme receptor a is as vision a affecting sie a le effect des ,

(tachyardia sie colie - prote the) betiel fore opet 3 7 عراح معد أو تعد في يوفن .

الوقوف الم فاجئ للناسلالي عندها المهام المهام عبل ما تأثم العلاج من الوقاق .

مرى لو المريض طفل قول عنوع أو قف وأنا هامل الضفل . 1 1 neaded respiratory symptoms go anaphybras is is in Ups 34 * 1 -IM epinaphone anaphylaxis il gis det -1 Normal Salme 1-2 L (adult) 45-10 mL/kg n 18+ 5 minutes 1 followed by Slow infusion 0 At the purchase when (Ingo me Doub) 1-th 0 0 epinephrine IV infusion 0 [Dopamne] 0 (hypotensin refractory to fluids and epnephrine) De walky fina & hotel to martin State 12 > 10 months 2 ca e le li 3 Hydrocortisone 3 ى أدورة أخرى على تعضيها مس الدُّعرامة ، إذا المرية عنه 300 injectable antilistamme. severe skin mantestation He receptor contagenets OI manifestation Bz agonst a rapiratory v

=> Pharmacologic Management of anaphylactic Reactions Epinephrine I mg/ml. - Adults: 0.2-05 mg IM, repeat every 5 minutes as needed.
- Pedratrics: 0.01 mg/kg IM, repeat every 5.15 minutes as needed. - Subsequent Intervention Normal Saline infusion

Adults: 1-2L at a vale of 5-10 mL/kg in the 1st 5 minutes Followed by slow infusion. Pedicitres: 20 ml/kg bolus repeat to atotal max 60 ml/kg as needed for hypertension Morney Salve 1-211 (ale Epinephrne IV infusion 100 00 0000 If ptn. not reporting to epinephrine injections and tolume resuscitations Adults (epingphrine infusion (Img in 250 ml D5W), 1-4 mg/min . totrating based on Chinical response or S.E - Pedratrics: (0.1 mg/mL), 0.01 mg/kg (upto 03 mg) **G** over several minutes. => Other Considerations after epinephone and Huids , Dopamine (hypotensian vertractory to Huds and epinephrine) 御一会 2-20 mcg/kg/min totrated to maintain Systelic BP > 90 mmHz 45 8 -, Hydrocortisone (severe or prolonged anaphylaxus) Adults: 250 mg IV (Prednisone 20 mg can be given orally in mid axes) Pedictrics: 2.5-10 mg/kg/24 hours -_ Diphenhydramine _ antihistamine , Ranitudne _ Hz blocker -) Inhaled B-agonst (branchaspasm resistant to epinephrine) 30

cellulitis at - Staph - skin as segue La site JB, a 44- year-old man, is admitted to the hospital for treatment of a cellulitis. He states that he has no known allergies. He is prescribed IV naticillin for his infection. During the first inhusion, he notices that his ears are itching and he calls for a HCP, on the practitioner's arrival, he appears narrows and is having difficulty breathing. what type of allergic reaction is JB most likely having?

anaphylaxis — Type I hypersensitality reaction , what is the first action that his practitioner should take? المرقف العلاج الذي حبيب المستحملة - Outline the medical treatment for JB's reaction and when the medical treatment should start. IM epinephrine

10) 5 pls Geriatrics JO a 44 year old man is admitted to the breated if drugs use conc. in the generatives love nuis origin dot , allowy 65 (will so : geriatics , c i Al & energy (sel) Tredles (le energy (sel) Tredles Zu); geriatrici qui telip d'lile moneys and is boaring distributed to his amount * Physiologic Changes waging gastric ach ola, GI air ala elle. 2) & Gastriz acid secretion (3) I Surface avery for absorption [4] I splanchniz blood flow GITUS blood flow [5] & Liver mass [6] I liver blood flow F) & GFR: Glomerular filtrate rate [8] I renal mass Geratrics & definition and epidemiology · Geriatric or elderly people > 65 yrs of age. . I no, of elderly people at time . I like expectancy . Geriatric often have multiple and Chronic disease. . In developed countries, they are the major consumers 177 of drugs: account for 25-40% of drug expendance. . प्राचित्र हें हैं के प्रति हैं हैं के प्राचित हैं हैं।

pharmacokinetics Changes * absorption of drug from GIT => passive transport [] Absorption Rom GIT م الفاد الأدولة والواد سم استعامهما blood flow S.A - fir passive days 5 & S.A for absorption by Gl motitit neglected approprian co - die 15th ges wabsorption de de vieile generics is significant Active transport (need ATP) Vactive transport endogenous by active transport celévileres di Substance (3) active transport celédialmes (41) active transport

1 NOT 3 20 12 9 20 11 60 50 WE (-Langlahiladah Ling our al [2] 1st pass metabolism 8.50 circulation systematic (51) is colien desto det cisual G Portal veins metabolisma pres ist - Hele s - I Hele detaxilication / (eve) et pass metabolism by liver Circulation (1) 72x laves Liver > = Let gentle of 6000 ~ Est pass netabolism labres 11 pass metabolism labres del 2000 1 1st pass metabolism sup Tiell go a 1 biografilability of drugs

wif we go in oid A. E ces so si => Nitrates ~ (Fix of > Clomethia Zale =) labetalel has A.E. de) > Propanolal y (Ulas Jo) 2 verapamil

ع الجزء الدُّلِير من أجساها معلمي [3] Distribution water is some les in 650 to 34 4 protein binding للن هذه السبه الحكف للرام ما مخته لا ق لعمدى وجود بموتسات بالرا (1 total body water) التي ترتبط ووالدوو وم albumn lest adipose tissue Is volume of distribution I volume of distribution for water somble drugs water solubles of le ras 5 Lipid-Soluble si (Digoxin, alcohol , water soluble - hydrophilic هيتولزع بالدح T volume of distribution for lipid-soluble drugs م الدُّدول التي تتوزع بـ علاكنا (Digzepam, Clomethiazole) Lipophilic on Dishopolis loading dose = Yox Conc. landing dose us it is vias + Ttotal body fat Maintenance dose - acustice Trolume of distribution V(d) , eliminatinge ine. for fat soluble drags Diazepam, -) Tild) ___ Mooding dose Clearance 5,51: 10) les is diatepampe reverse de se coffee sign metabolism in genetics > 1 Usb -> & Maintenance dose clearance ce nos

albumin les ? The elle distribution () will cest in cetis) (Je) wer sole - all is in /garefully 4 or de prise mes live will سَ مِعْمِيهُ مِرْبِطُ بِالْرِيِّ الْكِرْمِيُّ الْرَبِيمُ بِالْكِرِيِّ مِنْ ارتباعُ بِالْكِر العر كاله مي عامل موك إله بالأعار للير لسرة a visio as the end protein binding grante in all is the self Marrow theraputiz index my Idoxicity phi knotic lest, phidynamic & espiral in -> Free Levels of acrolic drug + (increased) -> 1 A.E (Phenytoin, delbutamide, ubrtarin), sterr massi Deglycaprotein (efflex protein)
ingeneral / its activity in geniatrics decrease)

BBB (GIT - 2000 in in its activity) Jobsorption

Usgarial

BBB J P-glycoprotein _, Tpontration of drugs TAE Charles Commission

(Hepatic Clearance) (4) Metabolism -> 2 phases phase 1 (oxidation reduction reaction) (conjugation) => CyPy50 and م مع العد العد العراد its iscenzymes CyP2C9 CyP2C9 metabolism by Phasell CYP 3A4 (Lora Zepam, Oxa Zepam) put the crowdell Phase II Go Atome The J. Phase I metabolism 1 half life (tip) Diazepam, proxicam /) in the state of the Theophylline, quinidine. Maintance dose curie metabolism A Loading dose ciris distribution volume (Sile an motograf, chadring lit Hand to la los sis , auto of toly - colors to you stagging to surve Marchine weeks

() to partie cleregue) [5] Renal Clearance (Elimination) (To les (15/10) elimination by kidney on 99111 -داعًا منجام مقالسي الله عاملوم ولا منعى نقدره و بالمالي معرف م أيكامل عوق ا عد الله الما الله الما والما Que à lévoled : i en plantique réprés hidney à elimination يغفى النظر عن العر creating clearance of creating 651603+ . Kitchey egg ports is 65! (مَن الله الدوار (X) آخِره ما لجرعال الله ولا أعلى منا إلجعال المرا ولاجار عرو المد الدرد الا عنى وفي أو اورافي (Diabetes inspertousences : 543) Pléases dies kidney we appoint ous la 131 Caution a medications J. GFR narrow therapartic index active metabolite _ammoglycoside, digoxin -morphine Lithium, vancomyen -meperidine

* Pharmacodynamic Changes in the elderly target i apris soi phi of ph. dynamic is receptor, intracellular receptor , certain enzyme in one action ceripse 31 20, Polactivities N modification you modulation of physiologic activities ph. dynamic & 2 Just me we self field so a isonsitivity a Us of its receptor is target as the started as the ع) أو والمراجعة إلى بأثر عنها الدواء معام عمام عام عام العر) Homeostatic reserve de zimen, 2 allere a internal environment as dispt use / Homeostaticies rue Die Co V Oragan V 00 1 su dias co is homeostatic reserve is offi جا حالي و و على تا زيمور معار مرو

V Homeostatic reserve Opostural 3 Thermoregulation Orthostatia Visceral: Circulatory muscle Control tweetvern responses the Est garatic is a hypothermia 3 Pol Theell a GIT muscles Est of state inspothermin me at & civil and postwal & Orthostatic hypotensku control 30 VBP 18001 1 motility بعل حراسها rebrant represent TI TESTES vers 3 1/2 Palay 4 capacity True Constipation CNS my depression لعاى دواء Ly walls Tees, CNS suppressen (benzediczepine, لمتفاقيها benZadiaZepen July 1 burbitural) عوامل ليرة (١) UBP - J blood flow of brain المجا لمترهاني physiologic ? merciale Megeriate وعوامل لها علاقه م لوالحم ما متربيكامل سركة (Falls) does الحراق السر، علقة ع هذا المعمر رح أدول د المرافق المرافق الم constipation ~ Lid 20 Joles ries medle gerisatie incloset barreceptor reflex sur Opioid . The Disigo ere is a conta watery last أول ما حيد الالعاق في الما تعديد Burnary retention massage to CNS Tsympathic activity bladde 250 NE DESTATION X-adrenage JEIZ reloxation G Contration - , vaso construction سَكَةَ فِلَى فَي Urinary bladder (حارة عنورة) معدمة بالعر أو له علامة بالأمراب (عنورة العربة والعربة بالأمراب (عنورة العربة وعربة) معدمة العربة العر

1 Homeostatic reserve Orthostatic circulatory cognitive function response العدرات أو الوظائف الدورانية الم تقل معزيادة العر (خاجه العراليس) الما معزيادة العرفي العرفي العرابية dementia cieu des alli reille ile. Orthostatic Circulatory response J Cholinergic transmission in brain brain Orthostatic a july stake
hypotensini
b X - blockers कर्राण क्रिकेट कि एक सिम्में हैं (20 We alertness Ly CNS drugs that م أى دواد علن يضغف الفدراح الدورالية prevent sympathative discharge from CVS geriatrix go los solo 1, anticholinergic ع ملكم تأثير هذه الأدوق عندللار Ly antihistamine (sedative) in one in polices hypotensoma of il -s anticholinergic_s memorization Cognitule Lalertness -) orthostatic refflex 6 baroreceptor reflex سكون مث وعربوه articholinergia CNS as 25 gestista impared > antiarrhythmic agent (disopyramide) hypotensian gericitis Eulap 1 a - antiemetic / antivertige (mechane) - antihistamine (diphenhydramine, hydrayfi) قي الديما - antipsychotiz orthostate hypotensius, apépe - antispasmodic طرتبطة بالحدث الذي الحجل لعدها - bentodiazipine des, jos ce 11 de -, digoxin لسم من م العربة للماط بتلون المل -s Skeletal muscle relaxants -, Tricyline of authoriessent

Age related Changes in specific receptors and target sites geriatric is receptor zimes a I to we . sensitivity new we . losse new we and is signalingues in receptor a birthersall i postreceptor mechanism response jest 6 gilled verpouse joi we intracellular transductor (à risul voir ente -> Change in the no. of receptor. changes in receptor affinity. - Changes in post receptor mechanism. response - Signal transluctories receptor slow burte Examples / 1 x advancer aceptors gertative in tailes of the of us 25 all gestill . A x responsiveness Ly not affected @ B_adrenoreceptors B receptor function is reduced as against or autagoniston B - Use Gul I es III Of Old gertraric relegit ex: Isoprenaline > B agonist elderly is Jeo And I is Chronotropic response ex: 2 propranolol _ antagonist effect adult is sister elderly is the ofter Skeletal muscle velasasts

-> elderly are more sensitive to the effects 3) BenZodia Zepines/ or ADRs of those drugs. warfarin/digaxin Sensitivity asking Tests led de 11 yo KMhiz jit as plinte lie a receptor a 2tulies post receptor mechanism July & م في اجلاف عي هذا اللدح generative is not sensitivity ister BZDs di lesse de lais Il effect in, cel 20 sonstwity leses love la 200 post receptor mechanism, receptor se à que el iso, لا تعيم عن وزاد العدة في العنه تدعون Ibrutinib: tyrosine kinase inhibitor م خطورة لم تمناص الدواء ليناس التي تعانى عن Cardiae archythema Cardiac failure FIbrutiub Piri law way (will stee of HCP + Cardiac dysthythmia of ptn. lap [Pill Ge N monitoring Isla Pill ours guideline ale prevention ADRI Presse el mail lio. pharmacovidilance cosp a gisal co gi naevi lia سَتُع موار معينَ في أي فريعة كاس (عل 12) أوسَع معموماء لها كلافة ع.A في نشر هذه المعلومة Well belod

Start (11) a separal - elderly are more soustweet effects geriodric - drugthorapy as conductos silio Centre of the de of changes ful as little de We hepothe metabolism dis 12 The 1 spest it con Burrell responsiveness à cest d'uie été à 2 16 cipe le . 21/20 distante le receptor es They is it is case - win thetane lose - interest م وعالم عليه المروق عند وعالم العالم م بدنا مدوق حا دئ النقاص عع الفردوق عند وعالم عامل على العالم م بدنا مدوق عا دئ النقاص عع الفردوق عند وعالم عامل معالم المناس على الفردوق عند وعالم عامل والفردوق عند وعالم عامل والفردوق عند وعالم عامل الفردوق عند وعالم المناس المناس على الفردوق عند وعالم المناس الم >> principles of drug therapy in the elderly عن من الما في عن من الما في عن من المولا المراه المولاد و المولود الم in sist of the symptom is file in constatione de dels in the [] Avoid unnecessary drug therapy e Ele 3 John comment (titlen) his ans es suit les ils عدر ساعات النواع بيعل ، خول الدعت عاعد ما منه دهد لير حي يناح 1 The Gre 200 602 6 600 i peter le chesi? Called Symbolisher of potential 12 12 12 11 . ولى على عنع أى منبهاح (عنع شري العقوة طول النعار) لأنعا Girlan A.R zist 6 cein () of to sland Alverse Est 2020 1) Will . والى أوقف الدواء الذي سي المرابع أو لمساله بدواد آخر الى عا. ٨. first line up non pharmacological/ Tues ZDIpis . cumary incontinance the

> In some situations non-drug thorapy may be sufficient Insomnia (autiol stimulant drugs, drinks, emptying the bladder before going to bed.) Consider the effect of 44 on the ptn. quality of life - Correct Choice of +++ is essential. For example 70 yrs old ptn. wostcoarthritis of the hip hip replacement therapy is all what is needed. واعدًا العلاج جزد من أهدفها محسنه Alike مراياه quality ما العلاج non-pharmacelegicals ## (quality of life and) مَلُونَ مُعْمِعَة لَوْلَة ، آكم وَدِيد ال replacement 13 Tract the cause rather than the symptoms - Every attempt should be made to establish the cause of the symptom and specific HH should be given. رورى ربي الم ويقالم السيب - our dom cute ADR wie

- Easier to swallow Symps, Supenson or efforcement tab. are more proffered to capsule or large tablets ario D.F edeir - elisappaie pei que dies des à geriatric Syrup susp, effervescent tob [5] Consider concomitant medical illnesses _Cardia failure, renal impairment and hepatic dystanction are very common in the elderly and may increase the risk of A.E in the elderly 157 1649 - 1 12 184 col of All others (polypharmacy) of the steel tree wery and tren paic. (B) Titrate the dose Relatively, the elderly require smaller doses wall durings to Start W, so Start low and titrate slow Lyex: winary in continance (and all a configured are a) مرفا للوى عرصة أنه الريض يستعبد صالل دوية فترالدها و الأول نعلل emergency Zuprepalis is is

(7) Consider suitable packaging and clear labeling Consider elderly ptn. w arthritis who find it difficult to open Childresistance containers and blister packs. Medicine should be dispensed in easy to use containers that are clearly labeled

18 Regular supervision, monitoring and review of 14th - This is especially important for long term thoropy to avoid the continuation of any unnecessary drug th and to assess the efficiery and toxicity of each medication taken by the ptn.

(*) Drug related problems in geriatrics TI ADRS

exate function test, CBC

I A helicopported

[2] Non-adherence

31 Inappropriate prescribing

11 ADRSont to mail

Occur more frequently in the olderly

- up to 31% of hospital admissions are due to ADR.

_ 80% of ADRs in the elderly are dose-dependent.

- Reasons for increased risk:

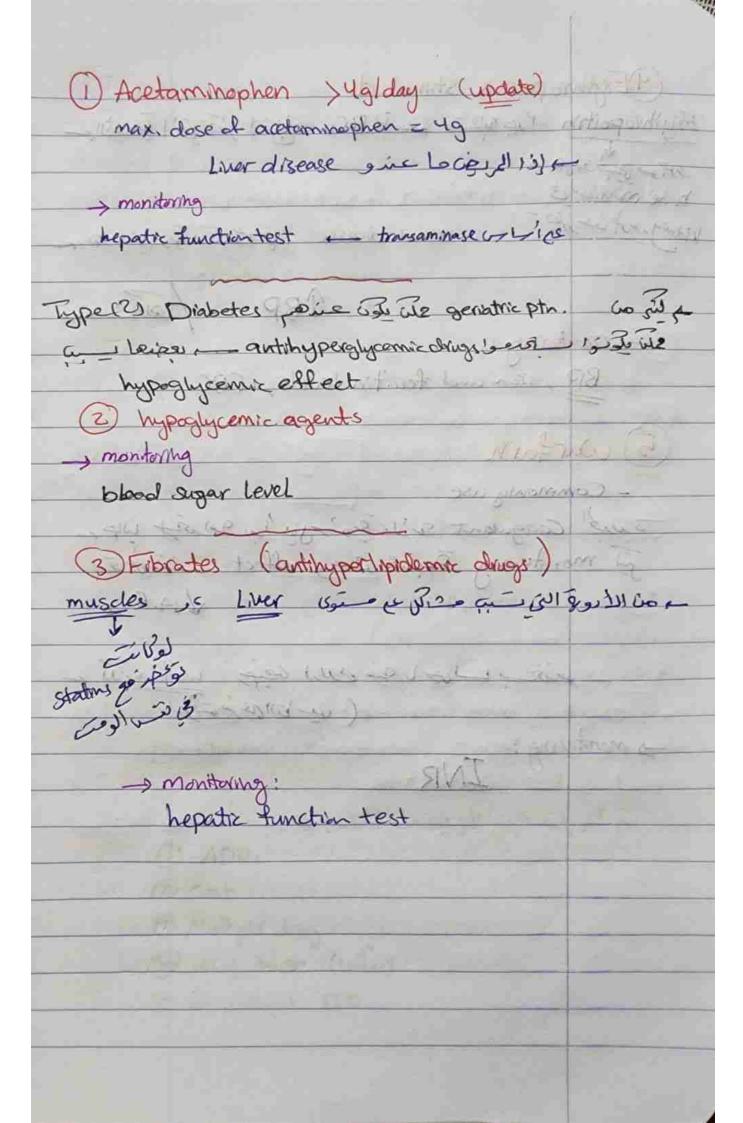
(AM) MA

La Multiple drug therapy (polypharmacy)

Ly Age related knotic and dynamic changes.

ADRS/ they are more common than adult population

(hospital admission law ADR GO 231 -Type (A) ADRs: Augmented pharmacological effect asser es dose les lug luge. totadet troop mo total Monitoring Drug (1) Acetaminophen (>4glday) hepatic function tests serum creatinine, drug Levels 2) Amnoglycoside blood sugar levels (3) Hypoglycemic agents V drug Levels (9) Antiepileptie agents (older) 6) ACEI potassium Levels (6) Antipsychotre agents extrapyramidal A.E 1) Appetite stimulants weight, appetite (8) Digoxin Serum creatinine, drug Le (9) Diwretic potassium Levels Serum creatinine, drug levels -(10) Erythropoiesis stimulants & BP, iron and for thin levels, CBC (11) Fibrates hepatre function test, CBC 12) Iron iron and ferritin levels, CBC
(13) Lithrum drug Levels (y) Niach Blood sugar levels; hepatic function (15) Status hepatic function tests (16) Theophylme drug levels (17) Thyroid replacement thyroid function test (18) wardarin / prothrombin time/ international normalized ratio (INR)



Exthere poies stimulants

Exthere poies stimulants

PROG (Str.) jest (a) Je Kidney work as job -18P / Lewis -- montorney in the major spections BP, iron and ferrition levels, CBC 5) warfam
- Commonly use Just coagulant of sir 202 day in an six life.

Just monitoring april 200 effect will de En monitoring:

INR

(2) Adherence extent to which one adheres to an agreed regimen derived from collaboration we their health care provider. - may be decreased B/c of is Mitiple drug therapy 4 Complicated regimens to Cognitive impairment 5 compliance , adherence an usilla الصفاحي يعني التزاهم لم يفي بالدواء لل الترام المرام لحيق الترام المريق بالمواد ولل الدواريم لا ما لم لم الدها ورعده ما ١٤٦ 2 7 TW TINTE Deciding Tysi sty could med in 21 ces of the (non compliant) of (compliant) a Type - مرفي راح عن موس و مورة بالله باخد دوار ۱ ادح ازد و النفر مهم (ad herance) المالاً مالاً مالاً المالاً المالاً المالاً لمالاً المالاً المالاً المالاً لمالاً المالاً المالاً الما (nonadherence 501 2)3} = أرساء تحفل المريض ما بلتره المراء ؟ (I) ADRS 3 Multiple drug (4) drug take (bitter) @ non suitable DIF

* Methods to improve adherence Aftern noth in themdays and bourst [] Modifying medication schedules to fit ptin thestyle The Les in the de of the [2] Prescribing generic agents to raduce costs. brand name , grasill Grap + [3] Using easy-to-open bottles, easy-to-swallow dosage forms (4) Larger type on direction and auxiliary labels --[6] Special packaging 8 MIT WITFS] (7) Good Courseling [3] Inappropriate prescribing - Prescribing medications that cause a significant risk of an adverse event when there is an effective -8 and Safer alternative. م دوار موصوی وم فی حواللہ دیاں a god vighter & (all a) speed grad (ii) By my allower Diff.

Inappropriate Revibinguacientainens Just in A 3 Beer's Criteria Manual A tool developed to help the Chrician identify potentially inappropriate medications in older adults include medications or medication classes that are potentially inappropriate in elderly ptn. Isted in 3 categoris (A) medications that should be avoided regardless of disease/condition. (B) potentially inapprepriate medications when used in older adults a certain disease / syndromes (C) medications to use w Caution. - Tricyclic antiologressant like amitriptyline (Strong anticholinergie and sedative properties) _ Bonzodiazepines including Diazepam. (1 risk of falls, fractures and agnitive impairment) - 1st generation antihistamine the diphenhydramine (Confusion and fall risk w prolonged effect) NSAIDS - 1/2 - - - - - - - - -(Trisk of GI bleeding, exacerbate heart failure and Cause kidney disorder)

Beers criteria - Alely où Mice of This six and ficteria cop A.E in geriatric ptm one related to kinetic and dynamic changes no tall waster activition in without the foul of Benzadiazepne dis to by they pothermin, orthoostatic hypotensia, tom (A) postural control as begin who wite iborg sto compate phylogeterating (8) ر حانه من الدوي عرب و بد 3 جراول as recommended besistagie : (1) bust displayed مكتورالدروية (absolute Contraindrated) (Lever many Da com geratric pto cBd les is to 25 qui 1 (2) Usell prayors TAE VISK as silve of social periodic is 18 18 (8) , trilly 10 cert - 90 Erec Title Heading, exicologic hartfolias as Examples () Benzodiazipine @ Tricyclic antidepressant (9) Antihistamine (5) NSAID

* mel 121 * (12) Exple upon cies · Classical Manifestation po upo la / Tepulo * vasocardiac diseas - Myocardial infarction (MI) Ly Symptoms: Chest pan Ly Ch. ch in left side ___ left shoulder, left jaw the from the state of the chart of the state of many and dell'alép - Lower UTI (P) Ly symptoms: Burning sensation by urmation TO ME PIR LEW CHE (pyelonephritis &) Upper UTI (17) Ly Symptoms: Flank pain, Fever, systemic mainfest-dans, clip of the Peptic Ulcer ope s so 2 to older pla present in abspect spontants of diseases paic pariatrics co a ful in i sall catist town & diagnosis is challenge de 1510 (Classical lope st Classical manter line à su dis a Acute MI cips /0121 ous ca Chest par one Per le 50% chest pain aux se ile to bes 50% live vomiting of non-specific Symptoms paric Solice ECG Ges Isles T's H NSTADED 1, ASTEN Weers up went (GI bleading ors H. pylosi , i

geriatrice in legge con sie gestilier MSAIDI * Exerts Criteria (propped gestil ciapostis asymptomatic Coli vie Ulceration Loige as The Il of more common we'll big pre of a UTI of of a bell sont as in a l'elé été cet classical manifestation al Chinary incontinence 4TI parices in 11/12 Zim 1 us out ine (السلس) البولي في يلوك موفقت الله مرتبط به ميكة عابرة) (Chronic Des que lou c'et of و من أهم الأرباب لا geriatrics المؤسَّمة الله winery incontineously april a wie a to un ine dip ips * Clinical generatics o vaste of - Pepter Weer of - 50% of older ptr. present watypical symptoms or Complaints, so use of the Classic medical model for diagnosis is difficult Many clinical Conditions are found more Commonly in geriatrics Compared to adults: Stroke , arthritis, Osteoporosis, winary incontinence, winary retention, demention, parknows, nomina, etc. -2 The published 10 , the and modernite to total the

rrrrr		
	* Atypical Disease Presentation in Older Adults	
-	a Contract of the second of th	
	Disease	Presentation 20
	- Colore - Feling	most commen type of Exthetally of do
-	- Acute myccardial	
-	Marction	In general, older adults present w
1		Weakness, confusion, syncope and
-		abdominal path; however, electrocardiographic
_	• 1	findings are Similar to those in younger ptn.
	a Hand have the	Spirit Sing to the Bay of the Character
-	Congestive.	Instead of dysprea, the older ptn. may
	heart-failure	present whyoner sumotoms lethoron
	- Particular	present a hypotric symptoms, Lethorgy, restlessness and confusion.
•		
	- 3 GI bleeding	Although the mortality rate is ~ 10%
		presenting symptoms are nonspecific,
9_		ranging from altered mental Status to
do 3		syncope w hemodynamic collapse.
	A STANDARD DEST	abdominal pain often is absent.
13		
~	AR I was a Constant	Older ptn. typically present w lethergy,
		Confusion, anorexia and decomponsation
-		If a preexisting medical condition
~		fever, chills and productive cough may ornot
-	90	The second secon
-	(5)	Dysuria, fever, and flank pain may be absent
-	UTI	more commonly, older adults present w
Second .		more commonly older adults present w incontinence, confusion, abdominal pain nausea / vomiting and azotemia
	73)	nausea / vomiting and atotemia

* Common Clinical Conditions in geriatrics W Osteoarthritis upled Diship -> Osteoarthritis (degenerative joint disease) is the most Common type of arthritis in older population and its prevalence increases wage (116 of people offected blu the ages of 25-34 years Compared to 80% of people affected are > 55 yrs old). Osteo - arthr itis bones joints inflammation Duvely are applications applications of a feetle inflammedory Condition Joint & inflammation air Equis & systemic inflammery disease 62 - 00 Upp pathogenesis is of in the care aid Is degenerative joint disease just Osteoarthritis 0 ومناها ريفلة عطلة ولدن عضع إجلامها examples/neurodegenerative diseases & Parkinson ses grale, nerves as degenerative, in cartilage is in cartilage of up sup cias a cartilage of up sup cias . • Osteoarthritis ومن أنواع arthritis ومن العالم عن منافع من النواع من أنواع منافع منا 9~ --* Types of owthritis -Orhenmatoid arthritis Quut arthritis 9 threatineme, confusion, abdomant party newseal wording and acotemic

* Statistically Chep; به قديد في الفي الله عارية بالأعار الصغيرة > prevalence of disease 35 34 years OA jainellais <1% > 55 years old especially radiographic screening (X-rays) OA sawed in 80 % : OA -> is disease of older age . What is Osteoarthritis -> A complex disease involving bone, contilage and synovium. It's believed to be an imbalance blw the erosive and reparative process which leads to a loss of articular cartilage. a vale in joints do 200 complex disease size a OA joint: junction blu two bones Components : (1) joint capsule (2) Synovial membrane 3 synerial fluid 2 scretim (9) Articular Cortilage -> _www.discoll العالم الفرالة راس ملي فيه أوس أونه cie ses antilage da as joint de OA Tais es de o Synovial Pluid , vér bones apply su consequences you view Tractifates provenient

9

· Normal Physiology: [] Synovial membrane - formation of synovial fluid * Components of Synavial Fluid: -Physluronan and Lubricia 12 25 * Its functions 2. Transportation of nuterents and oxygen to the cartilage. Cartilage sien है के दूर की कि पहेंदी की कि को की -(It's declared the for for interdate to be the event of -2) Cartilage , colp 1) matrix , Lyp is color 1
* Components of Cartilage. 10 Chondrocytes 11 to 11 1 (2) Extracellular matrix (ECM) chardro cytes us a just je proteins lest, Collagen 1 > Collagen type II provides tensile strength. * It's functions (binds water and hydroran) 1. Distributes large Loads. 2 Reduces Fration at the joint. -3 La Protects the Subchondral bone ~3 Ly Facilitates movement -3 -3

· Normal Cartilage turnover aio mes i una esto es de le cines de turnover موت أو تلف بعض الحلال ، بالتالي بنشيلها و نسب لها جلايا أخرى - Helps repair and restore Cartilage in response to demands of joint Loading and during Physical activity (months of the contraction) -, Chandrocytes: remove damaged areas Catabolism and synthesize new matrix Anabolism Loe in / Cartilage turnover is cartilage is turnover goot * and one die is i cet que sup cartilage is sit is. cartilage ale du is a cutabolism repris ali anabolism suprespondent Leigner - Lavein Cartilage Lip Job com In 1 1000 100 Les cipto of hip cop injury to sin داعاً بيموا thoi بعواد السيارة ، الى ما لميغلنا ضعا الني الل ما يعين آلاً. و المحدد الم Chandrocytes 15 turnover as dis lians * Commented of the protection of the contraction of t to a the contract of the second * 461 00 Elist billast ellips . . Godfras - has & LICE Supposed by their allest a single of Supposed to led the spit to the of Blit With the party of

Catabolism Turnover Anabolism when the same of the same of De Col 2 Light give Chandrages Extracellular matrix (ECM) 4) Collagens and aggrecaus Collagen (D. Type II Collagen) aggrecanases _ 2 Proteoglycans (aggrecan) aggrecans suit manh some story > MMPs (Matrix MetarloProteinan) Chandragtes us Local July 18 Collegens just et 19 still enter puel 1. IGF-1 (Insulin-like Growth Factor) chandraytes is _ Gildelall * Z. BMPs (Bone Morphagenetic proteins) : S Prost que 3. TGFB (Transforming Growth Factor B) Inflammatory mediators is mediators is give low Ly Interleukin_1 siml que pries es chondrocyte Lytumour Necrosis Factor-X chandrocyte just is in a et El. Carthag sepast was the at the self- at the G Type II Collagen a fin E Aggrecan Costabolism 1 sio releve luis ص خلال إنتاج مع المالة Tissue Inhibitors of Metallo Proteinases لم هذا الدين مودل عن تأسير callagens and Cortilage: - shill the in ille of help & -Cartiloge We regint ship riell in imbalance me Let & Ostecarthritis med ship give in in the confidence of led 23 ~ --3

dange con all is the pathogenesis of OA THE Telse-Turnover size the toil Chondrocyte is 100 811 15 damage sie is son (الوزي الليم (عربيعة عله كراي فيله) (الوزي الليم (عليه) Loil joints est Estient) Tierp amp Tillies (3) atabolism anabolism > Turnover the Chondrocyte (damage , Lite i. anabolism a seis Catabolism a ful 21 اللك يقع Cartilage وظ نقه عنقل de as subchondral bones - subchondral bones Metalloprotemases (July July 10) damage vice of solis Cartilage suite coliv Jap de wie of the Cartilage & Je joint space -Complete loss of Cartilage @ Metalloprotemases des airs des bones * @Osteophytes ____ نبكال مليم طالعا ، عدام ساعد في على الوزن ، بنعل نتودات عطية friction sign law (" 567 13 15 La Co a a ju وهمرود الألم ، بتعل نفع من ال-يوه على strid ، هذا التوه superficial joints is see we intlammatory mediator, ex cortabolism size inflammation if o . 45IL-1, IL-6, TNF-X inflammation jest loss of cartilage Loss of court lage is inflammation liet will

Damage to the articular Cartilage - Chondrogites: increase Cartilage turnover

- Destruction Outpaces formation w net Loss of cartilage. Damage to the Subchondral bones aggravative courtilage damage

To int space narrowing and softening of the remaining cartilage

Complete loss of Cartilage

Townstan of Osteophytes * Pathogenesis => All these changes are frequently associated to 9 9 Local inflammatory changes in the synovium (the synovium w T-cells, as well as the appearance of immune complexes) contraction of the contraction of the same of the contraction of the c 90 ST 1 day 22 Addit harristant 20 intronuction of the Cotal street and a plate and the 9 WILL STORK ~3 gold to found too stomathic ~ ~ - Loss of contrage into the home attention to the ~

* Etrology :-Secondary Secondary Drimary OA Coposastans und ais. - no known cause of traumar least in , but w the following · risk factors 13 O Age @ Gender -> female > male, why?! 3 Obesity & Talky AS ? 9) Family Hxoli: modern south summer of to 1 ASI 5) Muscle weakness * Diagnosis: leogles cell symptoms, ce su History reman certal co misje * 3) X-rays pto narrowing joint space · loss of Cartilage · Osteophytes (٤) معرفه طبيعة رين المريض ، علما ساعدي المخيص 6) Physical Oxamination Lo examination of range of movement of joints فحص القدرات الحركية للعفص (6) Lab tests ?? De sand surrameturs AS 150A , ceiglas poi la la lab testi upo de * what i sale i Pul colo was a interlulem & (1) estis al les agrec dellecos de la mandra a sogreco rhumatodarthritiscs; as a willy

* Edward Service X * Differential diagnosis UD يعنى بي الأمراح الدُّ عنى التي تري مع هذا المرض في الذعراص DD of OA ?! 1) Thumatoid arthritis RA 2) gouty arthritis • DD chi on a Lelevi ile / Lab tests. RA با OA درجة بالمفاصل فد تلون A او OA , TOP LAD TO THE WIND RA SOFT AB HESTS UPS -> RA: autoimmune disease -> systemic inflammatory disease Lab test : Erythrocyte Sadimentation Rate (ESR) is at was tests in the sing of the single of العدد مِنك الدليقاب © C-Reactive Protein (CRP) ESR · Co FT N X (8) 5 ESR test Green /25 15 mlammatras - as sol desic 2 (b) 100 00 0 10 10 QUECRP, 6 QUE GSR pericono por RA op. yle CRP, ESR São War OA cipo lot) RA: autoimmune donne cesis autoantibodies Lab tests rhumatoid factor (RF) ~ OA we go 2 Mybridge of the Control of the Contr

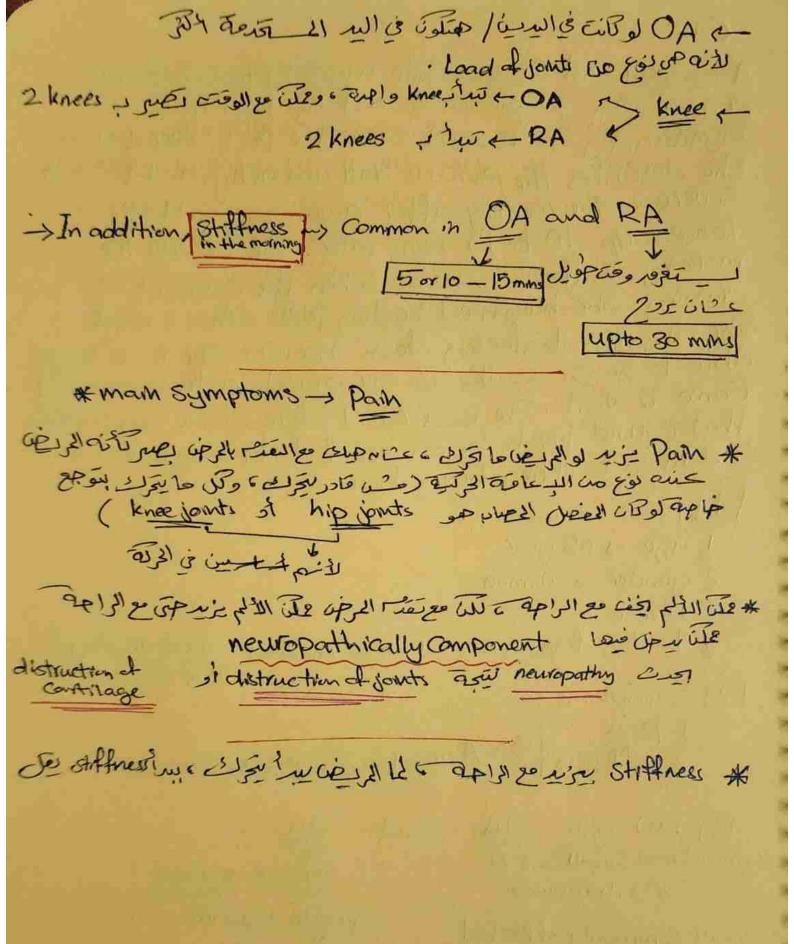
111111 case:-A 68 year Old Obese white woman presents to her primary Care physician w Left hip pain that has Significantly worsened Over the past Several years. She describes the pain as dull and achy, and it's most Severe in the morning after awakening until she "Loosens up" 10 to 15 mins later. She believes the morning Stiffness is werse when it's Overcast or raining. She has tried heating Poods without relief. She also reports feeling "down" because she is no longer able to go on works when they Come to visit. She is a retired store Clerk in a position that required her to be on her feet for long hours in addition to lifting heavy boxes :-II Risk Factors ?! 1 age - 1 68 year 2 gender -, Woman 3 Obese بعل المولية ا [2] Symptoms ?!] Pain => OA cies lès elections de l'élection de l'électio -BJ DD blw OA KA ?! asymmetrical देश की था म autoimmune disease = systemic inflammatory disease تكسيب مفصل واجد Symmetrialisticalistic + -> Joint Commonly affected مماثلة عن الجعنيم -) joint commonly affected to RAIto OA :-Odistal interphalangeal joints 2) proximal interphalanged joints wrist (الرسغ) 3) Carpometa Carpal (CMC) Soints (base of thumb)

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15 Signs 3 Symptoms awwill * (Objectives) (Subjectives manifestrations) و المولق المراق عبرعا فالمريق و من عطيع قبار عا أو م عير معار ٥ أو ٥٠ م ماور ٩ نام ها . Crepitus / Least. 10 = 1 11 leis, 2 le curel . - July 100 & June 1 1 1/100 . 4 Cracking or grating Sound heard w joint who all it is a print of the movement that is caused by irregularity of joint surfaces may be present La leger 15 in all light and Megulary as 516 Jeel es Squees) uneven by anthology friction de of wee -> Limited range of movement that may be accompanied by Junt instability Jeid was it associated w joint deformity

=> Prognosis Go de juil

+ Variable, depends on the point involved: If wt bearing joint or the spine are involved,
Considerable morbidity and disability are possible. * Pharmacological treatment of OA may relieve pain or improve function but doesn't reverse preexisting damage to the articular cartilage. and promote that it courses is any to the deal was \$1.57.385 Del 1000 to the the same of the same Contract of the second ter the country there are not and that the contract to the con the stay of heteropers is worth gots and e

(13) osp13 * Management of OA =) Goals of +++:-* Juide lines: 1) To relieve pain and stiffness. NICE G British guideline 2) To improve or maintain joint mobility. ACR 3) To limit functional impairment. American College of To maintain or improve the ptr. quality of life.

3) V risks associated \$\overline{\pi}\$ pharmacological Rheumstology guideline leis up ,) الل شي له علاقة در Orthopedics Management G. Osteoporosis C) Osteoarthiritis Non-pharmacological Goheumatoid axthritis pharma cological EULAR GEuropean guidlines Pharmacologicals stry guidelines L de a evidance collis - leour sus City is of in a stand Clinical toral evidence (1) سِنِ النَّدوي اللَّهِ اللَّهِ عَلَيْهِ عَلِيهِ عَلَيْهِ عَلِي عَلَيْهِ عَلِي عَلَّهِ عَلَيْهِ عَلَّهِ عَلَيْهِ عَلِيهِ عَلَيْهِ عَلَيْه De Sti as a non-pharmacological Liet as · Les pei i 2 c evidance entition to the company to the company 5 retio quidelines cire (= pharmacological, non-pharmacological CD 6 W. recommendations, non-pharmaco, el pharmaco, ce usoi evidance The see do Este Los Joseph Conglete a a Chrical trial Give

* Non-phermacological * 111 [3] We Loss Survey of Management

(3) Exercise

(4) Management

(5) Management

(6) A Ge se sold [2] Wt Loss 3) Exercise · guidelines * and the wind order on the I Educational programs *Education of ptn. (OA) about what? good education about this disease Joh Pill & S what is expected its therapy? 9 " its progression? pole ces de plication is in set of of our of the Stand sease 20 leta né le 3), le la mé 3) activities - sie l'étre activitées quipie six picés progression of disease. (e) 2 (e) is Es 1) treatments about education (is to Bell Confedence of the Brief Brief

[4] Heat / Cold therapy

Jet rese evidance a

Jet rus recommendations Scold therapy. heat therapy is 56ics 1315 tttttguidhnes apre Lephoe 5) Physical aids Total side 2100 - all cept leave les (be report recommedation (2) is a Physical aid of a residence con silver ce it as effect a is view The selection works to the company of a ट्रांट के के के कि physical aids (3 क (the 13 falls west of disease det the est was introdu Antorian Many [6] Burgery
Ly arthroplasty Ly joint replacement Extended Kneed forthe . His work

>) Non-pharmacological Excess weight increases the mechanical Load on Wt bearing joints. We loss (> 10%) is associated it decreased symptoms and disability. Exercise (aerobic and resistance) Should be taught and then observed before the ptn. starts to exercise at home, ideally 3-4 times daily. risk factor plas over weight is dis lipit & management d'ijenses a Jo a las e disease coplet pir a Jo a Jo a gue Tisk of OA is un? Claimes sue (Overweight) obese (will in a fli in) a senefits of in the war graphens; symptoms, civil in a in a sel;

Symptoms, out - >10% an in injuliation is disability

espically " Knee joints, hip joints

Surgery ے معدان الرزے مے معدل جاجة الريق لا الله العالما عالمون ins to AD office 5,5 out options is SE COM A LONG TO THE والمربض حابتس AND STATE ADMINISTRA , analgesizs w Opioids de asell zu al gla العلا فوركا واخت المقدر مخلى العربي عليها dependengative pop to & Exercise * aerobic anaerobic Cardio Ga Timber Little Contraction of the Contract OA cero we cold of contine للن المرط سُفلة و ارجل رُخلة وعن علوت في مقدر نبة ليرة من الرجى هي المني Strength amoretise a co coult do us LD 3) recommendating Rigo orthopedies were in OA GFZ Conditions Jo GP of July recommendation Ending in parte I

Souther of the Marin Marine of the Comment of the C * recommendations of aerobic exercise: Tond mide OA ippe expir EULAR

Service The or There 30

Level or the or The Service 30 By the Later of the state of the palester CADIZ red Je as les di recommendations es e Cardiovascular de cost apres guideline cese (3) weight sten, ce 21 stiffness & Julie 2 لعَولِ العَظامِينَ (رَوْقَ) و لَعُوكِ العَظامَ Anaerabic exercise :- N Strength exercise muscle weakness _ risk factors as Littles و جلينا نه العضاية لما تلون قوي ليز عم لذ نعاسة · joints as biell as ciesos binte gi anaerobre exercise goicilio co o Strengthing exercise اع نبعوا عم الذعل عربة في المربورية ، الربيقى الرب strength exercise exercises o is a cumil as of hules believe in the loss of the loss => exercise very important, recommended by

the gurdelines

siet, exercise and sometimes we need for other therapy

"pharmacological therapy" - Leis ques indications 3 Pharmacological therapy approved wit loss Pinger sure medications is layed Wt loss be 1 1 to WE Surgery a "barratric Surgery" * Non-pharmacological 2) Physical aids => Braces __, knee OA =) Insoles _ , knee OA 3 Walking Sticks - , knee/hip OA => walking frames, wheeled walkers , knee/hip OA =) Splints , hand OA OA of les jein guidelines of / knee braces (westin le les les prin guidelines Gesu / insoles & les (s la Gul Wi 21 cicp co () Walking streks as stills instable get we of leady joint - of cer risk of talls is cian se will come of with (knee/hip joint ipper of cess is

مالكالي العامر مراعدي توازي الحريض بالكلي بعلل عن موالكالي العامر موساعدي موازي الحريث مالكي بعلل عن موالك العامر موالك المخفف من موالك المخفف aside, pain des We duit deint ce jeul Walking frames, wheeled walker CPX les de seu ples es és le leur apris april en . थं । हा हो हो हा टारेट Goint replacement Les Ispir Lines breices GEULAR GACR 9 NICE guidlines knee joints i stability as us in wife و لقلل الديلم ال knee braces Pint re evidances aen is QU progression co dés de cip de éju co knee joint demage co de 300 / Knee Insoles G shoes of many in the same of the knee joint de (ci) d'orelicées de ças les gapis des as at Las 31 t Epin a EUCAR les co ais les ing ceinter ACR Town evidance

OA re usplicition / splints & على ترزع في جالة الله ور apisquidelines of les issences of thumb OA * Non-Pharmagological 3 Surgery =) Different Surgical options, but best outcomes w or the knee. > Recommended for OA ptn. at functional disability or pain unresponsive to therapy => Cartilage restoration approaches such as Chandracyte transplantation are Still investigational عه ناجاً لعا لما الحريق ملون الدُّلم عند حديد ويصل ليستحب . opioids sin sèces pres avel analgesic N
analgesia surgery lupol pel pel lie Surgery 30 - The disability contint Joint replacement up a could quity of life arthroplasty on Googliations no eximilations

* Arthroplasty ع بر الربطة الربطة فرراته عبالغالب العفل العناق يعطى منت وظيفة العفس العناب => hip and knee joint replacement 2 cost it is proved replacement below other joint up in the elbowjoint / Jud out al Shoulder joint anlkles joint of the massis Cartillage restoration surgery Cartillage du suc; leis pres surgery cies à Cartillage si une six po lugar surgical applicachers This cartillages in under investigation la jue guide line aixwasts we me ا العناع عيسود ولال العراق العالم المعالم العنا المعالم المعال c 313 Laque existance = Dag not recommended by guidelines

* Non-pharmacological [4] Physical therapy Heat/Cold therapy exercise ~ cs recommendations ine loi) les peat therapy in a Stiffness Ne Wes musde stiffness ve we. 07 21 ac 20 18/ 25 18/ 25/ Stup analgesic Morrie eight Jot of heart therapy Isla to Jop they are not district and they are pall & non-Pharmacological motility are) = (إلى بنقر بالأسال Management of OA Heat therapy

to open and only and the * Pharmacological therapy *
Symptoms & control dans to e Gimprove of movement assignation is G it inflammation They are not it * They are not disease modifying agents => Analgesic.

=> Anti-inflammatory

=> Lubricants Routs of administration for these drugs ale doint as jeil de so OA si juit Wiles is is jourt of sid systemic oral therapy Lyknee, hp and mond OA

2) Intra articular therapy autil asiel asis ROA is This Intra-articular injection nip joints job on section jours de circo - sied - hip joints job of one of the south of the section of the sect I recommendates best sup! But ist hand joints 3) Topical therapy on a Solution (OP (Estable) بالحا له يقع مع الاستعام العاب affected joint - Superficial joints ex: hand joints knee Joints ACIE is a newer fundalmen literal The the graphes of the modern It the same property of a sulf see someth with the see the many as you the the water was a sure

* Pharmacological +tt. STUBBLE ASS IN ROLLS ABOUTENESS => Acetaminophen Recommended as for pain management in hip/knee OA ptn. G Relative Safety S Efficacy
s Low Costs, when composed W NSAIDS Pain managementice The 12 ais in Eco sos dot to Po Pain management gliss cips ist is ACR)

ACR)

Lipsill guideline as roul to many the as first lines sopo and the Gor knee/hip OA Jet handay a out 1 190 ACR is a newer gurdelines wife acetaminaphen ce adjad evidance d'si é à 13295 de 1,500 sele suis « NSAIDs as gules jet as first line disein gurdelmes ju Elle was

evidance a 2 que, a cerp, a contrate pain The sidellect is change of als 7 paracetamol in we a joint is inflammention for hip/ knee joints, risks die jee safe die Wie Lee 1100 ist co عدنا منا عن مولية م مولية معنى معول الله الم powacetamd I cust of custo (كُتَرَ مَ الحالات على كني على العارا مسلمول 122 22 (2) pain d'i) 421 Ju (3 légrées dosing de up) niejus Driver Jesting I wie 325 mg or 1000 mg ms 42 8 sts 4-6 hrs 6-8 hrs max dose 4000 mg/day or 4g/day

على من لحالان التي لا تربي للبارا حسامول في ما حرف المن المن عنه و التي ما حرفاً من من عنه و التي من الله اقل عالم من عنه و علي من عنه و ع 0) Zalé 1) is & max. dose of paracetand cup, 13/ (=
Liver enzymes in monitoring Lellet . 10) is it

Liver enzymes in monitoring Lellet . 10) is it

Sulap of the max. dose tiple le l'i le dép #

Table 2 mer toxucity 0) 3 Inerdisamojo inc do him/ wi the ale do so Stuble or deteriorating ما ما نب المنعه ولان dose renal imparimenta NSAID, ou cieve dep lips as hepotatoxic powacotomal ou o Nephrotoxicity de vie day risk die espically combination of NSAIDs hepatotoxie ja ile NSAIDE ceso vilago o the through supplied the literal mux dase yood and day or 43 hard

Concerns of Acetaminophen' [2] Nephrotoxicity [] Hepatotoxicity w Chronic use of max. associated w Combination WNSAID, daily dose 49 or W Lower than this dose in alcoholic ptn. (max dose should not exceed 29/d in 7 those ptn.) => lopical NSAIDs - First line in hand/knee OA. 9 Good w little systemic effects. ال =preferred over oral NSAIDs in ptn. Over 75 yrs No preferred to a particular product very effective drugs for Pain UP & PLE apa NSAID, CE joint, bone, Tells all 13/1) 9 MANDS -, have anti-inflammatory effect. 24 Oral Pint bile 15/2 6 Topical NSAIDS - tui are a Topical NSAIDs Comparable efficacy Systemic NSAIDs
efficacy NEEDS

G Topical NSAID CI've in X Signifficant systemic A.E & la lives effect on Cardiovasculary

Kidney

Stomach

Stomach

NSAID; Phototoxicity poul use Le A.E. view of ist =) First line in hand/knee OA & different preparation from topical NSAIDA G Ibuprofen (3 Clere of C)

G Piroxicam (3) efficacy

G indomethacin (5) gou can start any ob

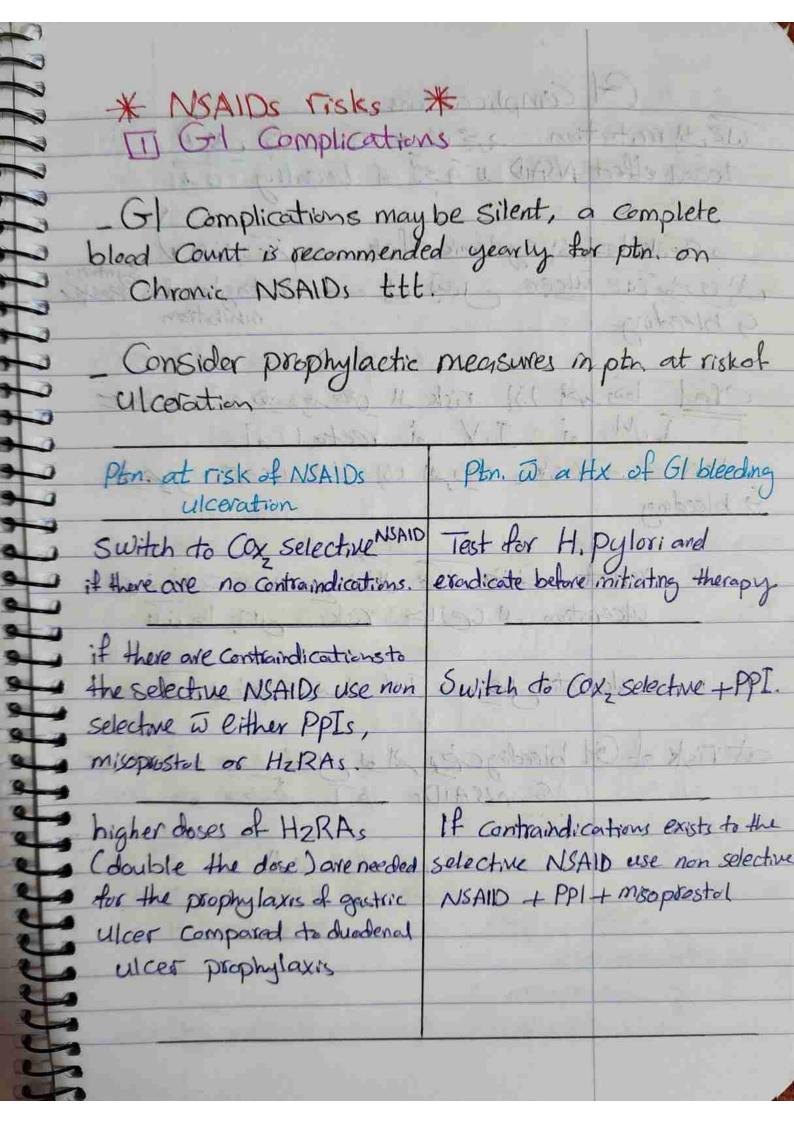
G didofenae (6) them

ORIGINALISM (1) (solution of gel) other preparation of preparations ist sul ille allie Total MAIDE Conformable efficient status wasto.

> Oval NSAIDs _For ptn. not responsing ptn. presented ptn. w joint to acetaminophen w severe pain inflammation to acetaminophen or topical NSAIDs and the top of an Tad Jakan way so with he All NSAIDs display comparable efficacy and are Similarly beneficial in OA. knee OA it hand OA sie celd ist Topical N8AIDs - the We will so the hip OA - since certal 15) to acetaminophen 1 tu vile not recommended by NICE guiddines (british) Contraindication it place NSAIDS POR I E NSAIDS PRINTING CO VAIDS VIIICE alydyte dilamer lande boo

=> Choice depends on !-- Comorbidities. - Ptn. preferences (2) Combining 2 NSAIDs affers no additional benefit efficacy à closé éle de de de de evidances. على ميون تفضيل بالمور اخرن الحص المريض و يون Comor bidities

A.E في ميده الدخلامات سنده في عن الدخلامات سنده في عن الدخلامات سنده في المدخلامات سنده في الدخلامات سنده في المدخلامات المدخ Je ptn. preferences Cierd 2 NSAIDS desing goil An gir Jein guide Ines J additional benefits _stude lo



We is mitation 23 and do colo 3] ? Local effect NSAID I 25" of Locally Ust I Complications may be silent, a complete J'est we were Jew of _ prostaglander somstere

y bleeding Oral 60 pt 13] risk 11 080 pp 00 020 120 00 I.M si I.V si rectar si wheer cont visky cert is of wheet ments S bleeding instationcies We will go 11001 Expt de ulceration I with risk de le in if there are Controllectic sta ulcuston of IN soll Epidale 1= * at risk of GI bleeding city also dei usu of 19 NSAIDS DE Lées organ decre at Horax III continued to recent a super all all states the the prophytime of gutic ASAID + PRI-+ measure encer prophylaxis

at rick milder milder milder at risk mild to moderate at risk high GI bleeding
GI bleeding 19 315 risk 221 d Jupo NSAID Exited & suprise of cellist will bleeding sie bleeding sie 3 已中国到了节日 at risk NSAID ulceration (NSAID Party de 21 Ais) 3 SI NSAIDS PORT VIEW & SI delegal of of ISN = ex: COx selective NSAIDs Fold Bulcer Nice For and some non-slective preferential (NSAID selectivity on Cox, GH. Dylosi Pir Wet Depos de ciente de de les non-selective NSAIDI-+ Hz-blockers (Fine CB1); H. pylori have more protective offeet than The of or PPIs JEST H_antagenists Cox + PPIs N recommendation cien bleeding gulcerationie che il se étall cirt à l'

- Cardio Vascular risk is increased in all NSAIDs users, irrespective of their baseline risk or duration of use.

Risk increases w G I doses white and G Prolonged USE. G Cox selective and diclofenae and ibuprofen S CV risk Giv 22 1 is chemic heart disease Com obje i wife (ie) and Stroke heart failure - S CV risk - NSAIDs as us job all to 100 2) ce, cox selective is Buil 08 reforents Pe THE PARTY OF THE P Décomi (NSAIDs de TON rists de COX selectricus CN risks six we ais the NSAID stee est de Ahrombotic effects 3 a si manly

MSAIDS WITH MSAIDS JPAZVI INSAIDS OF 6 (BP+ stages charge should Trisk of thrombosis I mastrall do not 1 CV risks. 24 Julie heart disease si CV disease que il tie il te NSAIDS FIR CV disease Ils Wisk give 3/ 60 11 15 NSAIDS Pir Sie COX selective Devisto 19th. Prolonged time was some somedring NON COX, selection Godiclofenac G ibuprofen

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[3] 0 - 1 - 1			*****
(3) Renal toxicity			
			0
- Renal toxicity wall NSAIDs			
- For Dtn at risk (who?)			0)
Serum creatinine Should be monitored			0)
Mar 27 de al Marzon			0) 0
after 3-7 day of therapy			0)
			4
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Liver toxicity was associated in the use of diclotenae and Sulindae			0
A CONTRACTOR OF THE PARTY OF TH			0)
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synthesis of prostaglandin vasodilecter be) 312 is i upt , prostaglandaplies [c] u's kvolney & project PG aptis leadney of aire zone G TPG __ prediation of Fonal Wasculature ACEIS POSTA F HF sinc Gers (= renal poissues it risky sale with a simparment of the state of the side of the NSAID, Le Prostuglande cés jal que il le sépt d non selective & Selective COX & region 190 (18) & risk of kinding disease is non selective 190 (2) CSWL selective COX, NIAIB, - Skedepoles During The State Park

Sisk of CV
high Cox Naproxen 1-10A dicherac gudelines Base ill d CV NISK Jet - NICE/Under #: outres a com ACR/cluster high low sylvation preferential 2) Indomethorn 5 Etodolac 5 = 1 2) ketaprofen. 3 Ox, seective

قامرة (١٤) عراجعة للحامرة الساعة * Management of OA Pharmacological therapy Non-phasmacological (1) 4 Acetaminophen therapy recommendationes guidine d'à - 4 Leve of File guidelines evidence as first line of OA or fire / and legel of لعن يحف الاعربان / كانوا زمان بعبروه عدا total of the policy property Toposo recommed de commed Conditional recommendating guideline cie a Centraindination The Centraindination of NSAIDs het paper i was said to de la la partir de l E Ly NSAIDS very good - efficacy api and and recommended strongly by all grudeling 3500 35 occommendaturbole 3) therapy of The y gest led and Symptoms de to be of Tout Cartilge sirarejet cartilge il gelf! progressive air o make the flag the same of the same of many with Tyrical NSAID my used of hand and knee efficacy Testeles and i knee as use trecommendation of الله المعمم لل يوفي نق لها عنبالك على نفقد الدوار عن غير الله عن غير حا ناخد معمل معاقبة المعمل الم

=) lopreal Capsaicin · I soluted from not peppers, releases and ultimately depletes substance P from afferent nociceptive nerve fibers. May phromecology at . Phromocology at the po · Capsaich cream has been shown in 4 placebo controlled Studies to provide pain relief in OA when applied over affected joints. To be effective, Capsaich must be used regularly, upto 4 times daily and it may take up to 2 weeks to show effect - Recommended for knee/ hand OA hot peppers assiste on Topical Capsaran & Suggested un different MOA 199 Commonly sull Zalé 1 cip co in depletion substance P from un a afferent nociceptive nerve fibres الله لغي احدث اللهم ؟! حدد أنواع الدلم ؟! Neusopathic pain, Nociceptive Pain nociceptors just as of . nocicepture pan co ce il est oil dil cict. المالي الجع العزب

=> pain modulator { Stimulation of pain depression of pain Pain madulators redit analgesic cer e depletion Lies Substance P = الله من اللهم اللهم emulsion of (patch) Thep Day wages Topical Capsaicing Europolication et in The application et i us Painreleit de di us jui evidence que capsaich de * carried Ao Star int remarked to commence des le cie : acute pain cu 2 la provien Capsaren معاول مربع ع فقاح من الربوعين إلى ١١ أمرابع عديد (العلام عبد الدر الدر المنظم (عربين في على الدر العبد) في الدر العبد العبد الدر العبد العبد الدر العبد العبد الدر العبد ا Pan Il managment des d'ac d'il je le d'il عن عربى Ao ولا مع الدر بمنام المنظم لحدة الله مع OA وأجه منا Det effective de la l'e cient and who shall support a en is wis ger recommendation ausois capsaich co; * retio ese Pin . (hand/knee Pin) sent 30 MILLY To havelens y man in ship of the fishers of

ACR => American gurdelines 15 hand & capsaran Plint vice 1146 on of mide of Call's wind writation des corpsaich Wie co @ As I efficacy stile is a bes if it is recommendation t John de certitus. Advense effect susul aires ip to old على هذا الدواراً وليف مروث عنه؟ Trangelolis in the total of the second Recommended in ptn. not responding to acetamnophen, NSAIDS or not Candidates for NSAIDS Transadol, wo or without acctamnophen has modest analyesic effects in ptn. w OA when Compared to placebo. grand of mangered the state , doing to the grand . Tramadol, is also modestly effective as add-on therapy in ptr. taking Concomitant NSAIDs or COX2 selective inhibitors

=) Opioid analgesics · Low-dose opioid analgesics can be useful in ptn. who experience no relief w acetaminoplen, NSAIDs, intra-acticular injections or topical therapy. · Started at low doses usually combined a NSAIDs or acetaminophen.

9 9

analgeric is she Tramadol * die, opiona receptors ce die as relipe machanism reup take inhibition of serotonin da serotonin as 19 may serotenn done of the pain madulatorpathuray norepinephrin, serotonin Athl ste sit & Substance P a c sie Wis * Seration.n and norepinephrin pathway - & Pain to triem Cincland addende 20 - Driem Single das =) what are we doing induce sereton's reup take inhibitor? 7 Serctonin Pathway - V Panh - we sit & serotomin reup take inhibiter gest in si Managment of pain. * Tramadol and Opicid analgesix Lepoes recommendator si ciety , PLC 2/200 23: Oprovd analysis citis Tramadel 1, is 1 = 1 dél A.E , de l'ependancy , dél addiction potention NSAIDI & Tramadel décide la la guidelines + Use gastell 1) For one Pic apo opivid analgesia Tulp in (یعنی عربی عیر می عیر می ما ABAID می میرون و تا ا Scond line therapy - intra-articular injection of Contrasterial) - Est view, Fire Period In al dies . Tramadel , Tim as combination w other penn releifers (acete, mnophen or NSAIDS) والاسترام للعصر فتره علقة يؤخد الترامادل لعترة موعيه لعامه surgary of aptitherapy if Lo

5° E OF US 31 * * Dosing Parameters of select agent used to treat OA. 1) Oval analgesics, 1000 mg every 6-8hrs, Max. 4000 mg/day, 4) acetaminophen > 325 mg every 4-6 hrs, Max. 4000 mg/day Literamodol 50-100 mg every 4-6 hrs, Max 400 mg/day 2 Intra articular C.S. M. Ly Trigmainolone acetonide 2.5-15 mg tor single dose, (in) by 11 extended release 32 mg for single knee mg. Ly Methyl Prednisolone acetate Small joints 4-10 mg of sew 3 & pigles for a medium joint 10-40 mg ai j z jou Large joints 20 - 80 mg 13) Intra articular hyalimonic acid in. Ly hyalwonic acid 16-30 mg affected knee every week and a substitute the substitute and the 4 Serationin - Novepinephone Reliptake inhibitors by Duloxetine, 30-60 mg one daily Max 60 mg/day 51 Dietary sugdements Ly Glucosamme Sulfate 500 mg x 3 times daily of 1500 mg once daily 400-800 mg upto 3-times daily In glucosomme aller Banet He mis of Co - Kindle Lines

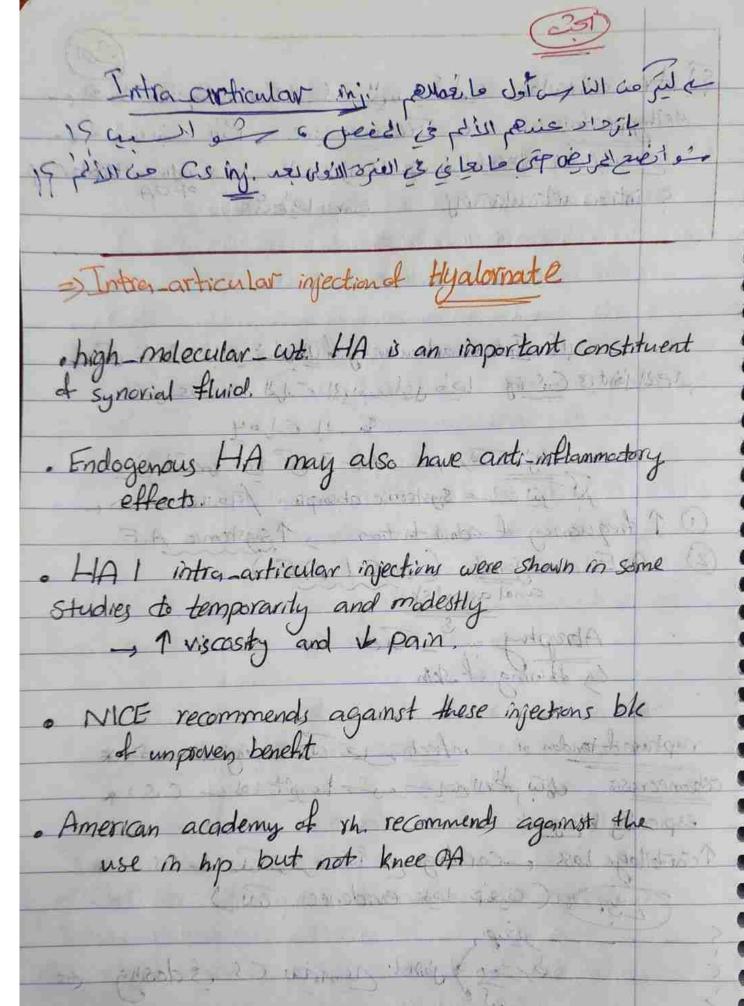
=) Intra articular injections of Corticosteroids · Relieve pain, Posticularly when joint inflammation and Recommended for hip/knee OA when analges wo assetaminopher or NSAID, is Suboptimal. The therapy is generally Limited to 3 or 4 mg/years because of the potentral systemic effects of steroids and Little responds to the therapy . Which Steroves are preferred ?? Systemic Local as w systemic infection in the affected soint, Osteoneerosis, tendon rupture, Sterovals but Less Common and Skin atraphy at the injection site. (1) - 134, 20 th section 5 45 and level velocity 1 1 10 de 20 de por trotosola en en el mil m Contracting the State of the St

* Intra-articular injection of contrasteroids Vapusé recommendation Lause For Co Commendation Les Cal Calquil # (1) NSAIDs (cintess & contraindication) (2) Intra articular Certicosteroid Soint Je) 2 2/ La inj. La lias a of NSAID () in [said of displaced in (*) depical lesist of Contraindicated NSAIR 1 وبوجوها لمرتاوا (لها و) inflammation , of ins one is 4 Intra articular mj. of CS Vip 95 recommendation Sull somt & bee ch class const recommendation w (hand joint I is Wife will. Intra-articular inj. of CS ?? Intra articular level ne inj. Bose 30 + Ed C.S Par () 1) Triamcinolone acetonide, Methylprednisolone

つい S. Intra-anticular exectional Cis itsure climple cities e rethylprednisdane a Triamanolone Piri is and V 777 S intra-articular ing. Ever leiet ail of OA 777777777777 18 Intra articular by for get is u a 2 is war ٢٠٠١ المال المالة . inj. 30 - 122 3 00 tol Gest de m ma la Systemic absorption / Tolle of list, 1 trequancy of administration, 1 systemic A.E.

2) A.E. on joints (LoCal A.E.)

and around skin Atrophy and we 4 thining of skin rupture of tendon of infection set us - injection oil * Openecrosis we real ret of the cit les - C.S & espically hip joint 1 Cartilage Loss - Cartilage as Flandis Wiz - Cus * (251) (céap lesse evidence in) de sont review Cis de dosing =

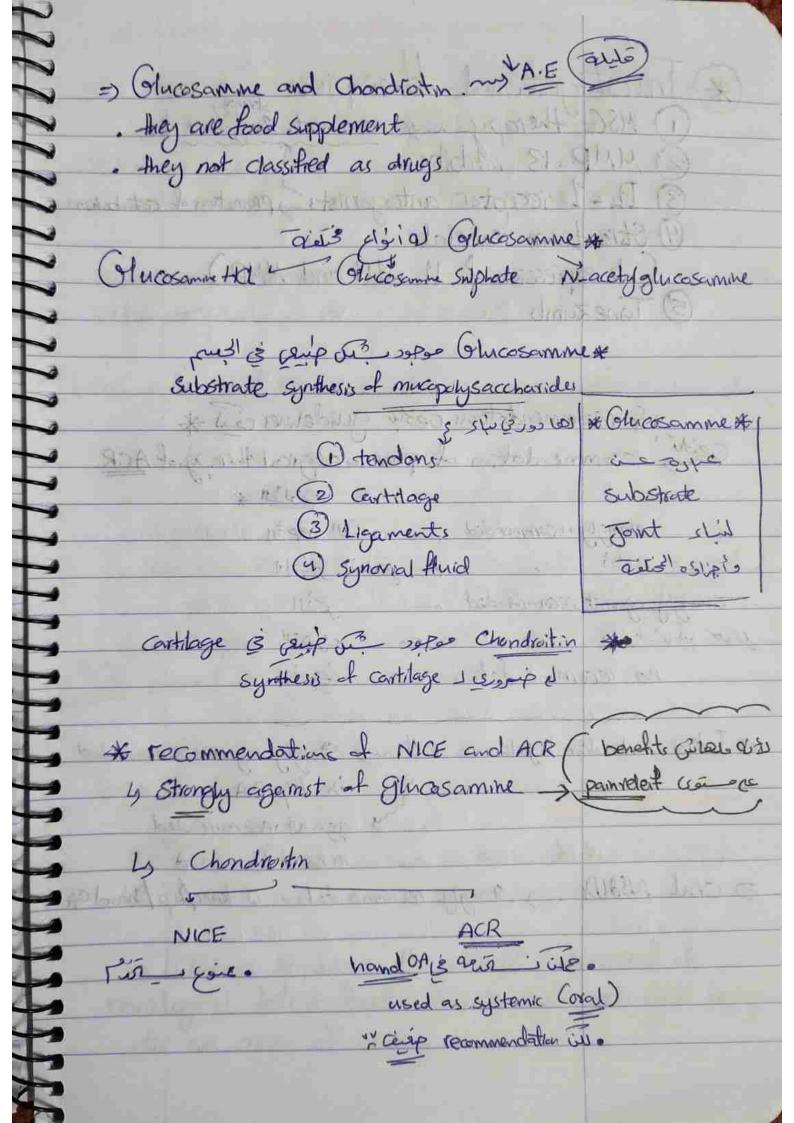


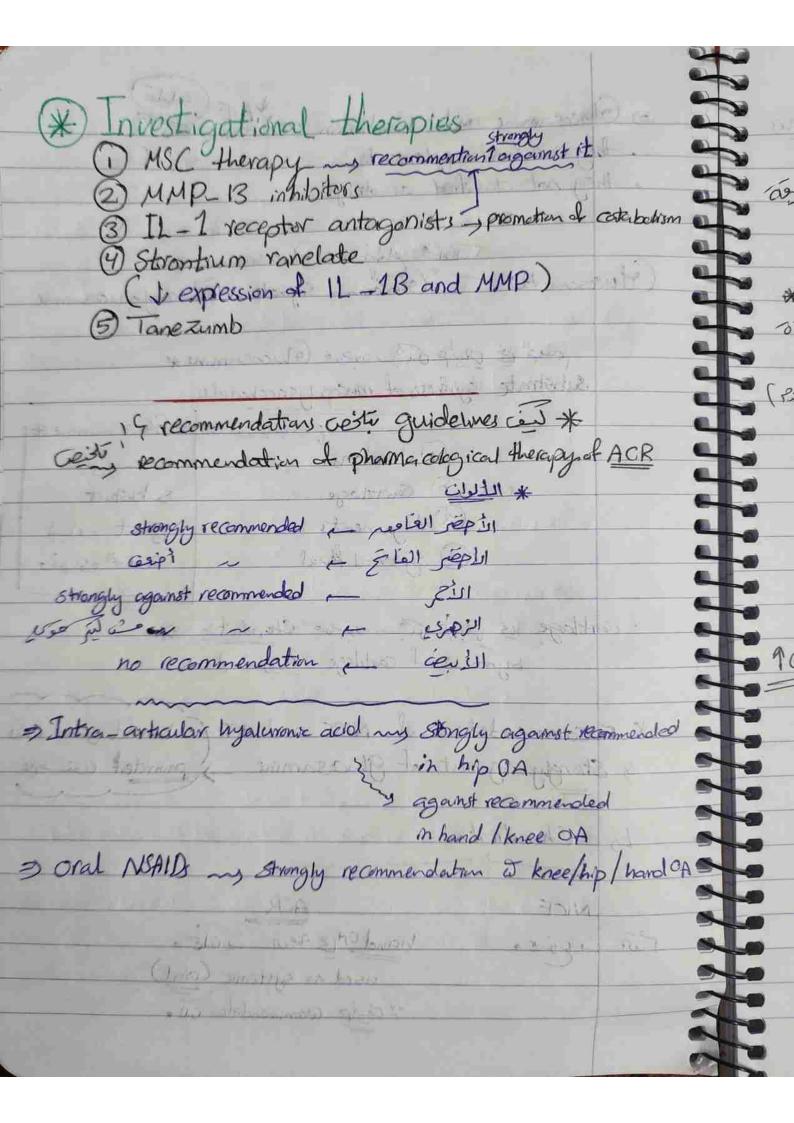
Hyalornate = Hyaloronic acid synovial fluid & could colo all Obsit & cruell alis synovial fluid set Lubrications
anti-inflammatory (1) endogenous d'i verse a hyalosnate OA cope inc synovial fluid & hydromate just site well desert a inj. The she is a det coli sie y injectable de vietis preparation die * 5 hyalornate * Several hyaluronic acid formulations are available in US for knee OA I Eutlexxa: 20 mg (2mL) injected every week for 3 weeks 2) Hyalgan! 20 mg (2ml) injected every week for 5 injections 3 Orthovisc; 30 mg (2ml) " or for 3-4 weeks 4) Synvisc: 16 mg (zml) ~ of sweek 3 Synvix: one: 48 mg (6 ml) for single injection evidence coloriges of effects is gentle out your 2 recommendations up let t us of Clarical trails co lei upo 3/2 م وجدوا أنه ، النا من إلى احسن على هذه الأدوق ، هما النا حى ألى عندهم Ly knee OA , hand OA transient colaision in Ly hip OA - a solo is effect of hyaluronic acid = effect of placebo

=> recommendations of guidelines · NICE a destate tout lawage Bule Greele q'il : hyatornate mi plist zeinte Fip als aviel knee de hip joint is و من من من الدارات المراسات ال · ACR recommends against the use in hip Liverel of levist in - kneelhand is let + The and with the contract the second of the second * recommendations of quide lines * (Pinjul Josei) (30) recommendation los (Pingel Jew) Recommendation, i The grad Cot is a لع أو تكوى مستور عنى لو الإنظريية يـ تريم الروار عادى) contains an low property in a few to a superty of alpasso of 1 recommendation de Est le l'upi, Bolt trials and dis preparations of hydornate much = 15-3 and gown of de A secommendations or - therapy coarse to or is of رهذا الخضوص من edopply for 150 Als = 61500 annihight for 150 Alle

=> Dolivetine . Animals models of knee OA Showed that sensory nerve fibers innervating the knee are significantly damaged w destruction of SubChandral bone junction, thus induce neuropathic pain (NP) · Doluxetine up as adjunctive therapy for kneel hip/ hand OA in ptn achieving a suboptimal response to acetaminophen or oxal NSAIDs alone, in Ptn. w evident neuropathic pain or muscloskeletal pan A. Es / nausea, dry mouth, somnolence. transported brust * Doluxetine: Serotonin novepinphin reuptake inhibitor SNRI =) Animous models of OA? action of the policy . عند الجرب أرورة عم الحيوانات ، أول اللي لازام نعل معه الحيوانات ، اللم في عند الحيوان inducing OA at animal Leizacoj. al large colfiel is OA large lde S, Toloyy, knee OA Joint use oscion will damage nociceptive pain damage of names 2500 neuropodhic pain neuropothic pour los quest up le una / of to coste la la cos OA is doluxeture best of GUL au OA is nouspothic — OA of lovie liprép, modest des up os it,

kneed Doluxetine Pur ciripi effect o a verip recommendations is A. F age co do coso centrally class slaves * =) A.E / nouseer, dry mouth, sommolence. I Ul's seration in a vouls la vièr ust 20 ° DOI * Chandroitin =) (Tlycosamme Found endogenously in 3 forms Ogluco Samme HCL Costilaginous tissue of most mamomals and serves as a Sulphate Substrate for the formation 3 N-acetyl, glucosamine of the joint matrix structure. It's required for the Synthesis of Mucopalysaecharides found in tendens, Ligaments, Cartilage, Synovral Hurd. =) The used regionen: =) Cautions Glucosamine my 1 moulm resistance in diabetic ptn. = Evidence / recommendations NICE and ACR my recommends against.





* Common Clinical Condition in geriatics * 2 Ischemic Stroke => Stroke = qielowi que) الم فياة ، ع مقد المالم في جرء معين من الرماع ميب شي له عديه De selp ight to bland vessels C.V conditions was put stroke a *Cardinascular diseases/most common diseases * my leading to death لع في العالم أجه ، هم رقم والمرمن مسيد الوفاة हे। प्राप्त , निर्मा दे لم يزداد جدورها عند عرجني السارك (عنرهم زيادة كبرة بيرة الدوري) a) brain the transfer of . The most metabolically active organ in the body. . Represents only 22 of body's mass but - Requires 15-20% of total resting CO m (Cardiac output) لع لد بيوزع عم اعضادالجسم بالتري لم اللمان إلى فيعال المان الم in (kidney o Liver : (and) il to leave i => Stroke is a term used to describe the rapid loss of brain function that is of presumed voiscular origin. 88% of stroke ____ is chemic strokes 12% hemorrhagic ones => Is Chemic Strokes: the abrupt development of neurological defect that is due to inadequate blood supply to an aveg of brain

A CONTROL OF THE PARTY OF THE P 2) Stroke i rapid loss of brain function at least 24 hrs course my vascular origin Zich rupture laigup à GIT lès les Lada (april 1 hemorrhagie 126 morre common [126] Ischemic Stroke 888] विन्द्राक्त पर विन्द्राक Loss of brain function is the i cosé sul brain co déécés à péss get 3 op el set cuber cel aciel unpox و اع اع الما على مع مدى الوجه و عفلات الوجه 100 colonia viva literio Eggl 3/05/0 pepaple ill of ile brain stem USOU borard thanker that it of produced transfer crays 5 jeal 13 Jego apried 62 to the الا الم بن من وي على عن المعاني ، لما على الرام الوامل للرواح 5 brain necrosis cos The Go & - As chome States , the about development of neural agreet that is such a markeyuse board supply to an area of broken

Ischemical to the transfer budget , and y · Normal Cerebral BF overages 50mL/200g/min ischemia occurs when it becomes {20 ml/ 100 g/min BFI is a let a relai to campil det BF to dete brain (ischeming) retein lie - 20miles Jet * ceis licy helph the dis oly , so e the riture itelphe these oly year fundamability is of a ? des lu we Price BFof brain de de Co To Luis a como on in the second to the second the second Ischemic Stroke: · Can be due to atheroscleratic cerebrovascular disease, -Cardiagenic embalism or prothrembatic State. 35 blood vessely set in gla ischemic stock www gin * Cercilia spila ine) atheroscierosis li asini, MI 3000 10 00, me 200 throbmus tomation, e rupture risues, do con che site pust cit che as thrombus con che st. heart as mile thrombus Courdingenic struke

is dews thrombus dones we heart went Atrial Fibrillation 9 5503) offer blood clotting was cours runp its within the heart itself, atria itself, 1. 42) Jamelard . Sinsortrial node (SAN) as quetin 312 y 1 550 des 8 13, atria of ce a limit tems atrial contractions, atria depolarization (عوة واعنه) Atrial fibrillation Tup is let. OPLE ME EN SA noole de in मार्थित है है। है है। है है है है है है। Ectopic atria de delle replie stul de ne 1 De atrial of a quellise of ectroic depolerion jest, action potential us (3) I'm respond contraction 3 Eul - contraction des SPring Ul - action is four je with blood of or strake cust were blood clothing exp histories democrat appear as more agend Stroke on all rio & guell coutrisis of atrial fibrillation of closing Anticoagulants lapl fil want out a following property as teachers of the stand of CONTRACTO Shelice

Ischemic stroke and stroke Zup dist = Jeile Functionability rée d'i liép « etrake cè je à le Stroke Elisticis cinis aper special stroke stroke 2) was / su lles la page of yell us pour to Ischemic Is In soll Hemorrhaigh the state of the s لم علن تلوك وغطي ليتر embolus thrombus defo will a hemotoma will al (व्यक्त केंद्र कि (व्यक्त केंद्र कि سرائم و ترفع الصقط ب 4) Condto and your than Intracranial pressure consequences of using wes JO Had God 13 العلم الما عم مستوى الدعاع لكل 09/21 Res, 61000 clotting Tety blood vessels is The Cust will للن بعيها الخيفي هذه اللع إلها، لأنه الحلفة لق عا محرك أو الجسم ما transient ischemic attack (TIA) on - lessin less til or mini strake ischemic strate Cost este visk à Gier Leier. den beggiet de

* risk forctors of ischemic strake I · rok tacter C. V conditionaires Enje up C. V Conditions Esw risk fector Bostil ce st visk fuctor de ischemic Fastas levid de stroke stroke ap ill visk factor céastas ipsil * Risk factors * Non-modifiable

June 1 wastalang to risk factor لَحْ وَا عِلَى اللَّهِ اللَّلَّمِ اللَّهِ الللَّهِ اللَّهِ الللَّهِ اللَّهِ ا Propy C.V conditions 3 Gais W / Willy de gender , age dévice C.V is at I risk factors pil prieste tipl Tage _ Trisk of C.V condition Gerder ____ males > female Ble risk of CV with menopasual 2 mul lot e # Male = monopasual woman in risk of C.V condition Low birth wt. / rokfactors apace اناب التي تولد بوزن اعل بياوتوا عجم لد strake . prée 02 = 327 120 Les is ste iskfunder of cols

* Modifiable risk forctors of ischemic stroke hypertension up Leat subi e goal of Heropy (otris) dous) Tisk & Complication give hypertension , abyl -> hypertension - Single most impostant factor - guidelines rien sid a l'appre de chie el newer American guidelines co foi BP il targets orsine (Gpil) quolelines atrial fibrillation - most important and treatable caus Stroke up otheroscolosis with wall aist e strake un col wie of or cardioembolic of our out - Diabetes it's very important risk factors 2) self diabetes cipe & Lew city of complication 1) fiftee un type 2 diabetes (insulin resistance) 4 Strake

proposed positiones consider d'abetes apris Oglycemic control we so get other orsk forctors of go Josef P. II hyperlipidemin of hypertension oic 13) dichetes cips ciac = رزم إعاجم وأرغرعايم وزعم La Cil antidiabeteic qui priset delpis. Cardipprotective effect Dyshpidemia

LDL les steps lelet io c leis varisie Atherogenesis = atheresclesosis plaque formation lus edema (3 Upi (il strake si -) Cigarette smoking and alcohol thrombosis , athere genesis (3) 201 (= , estrogen Containing drugs (oral Contraceptive), postmenopausal horomone therapy (oral contraceptive) () डी डिल्का रहन मेरहा) एए कहले रियह में uterus glas a cost for des cled Coti dio tisks a postmeropausal is ligrer of condineration as mono replacement aboi 12. Let thrombooks six ails atherosclovsis six to Cuper y! (Lipid profile would in a come process thousand Est Bister (Civ problems

I Synthesis of antroagulant (and Valuable) الإلى وكرين من و جلها عاليها ، وكريس عند لوافل ؟؟ - Obesity 1 Civrisks Cjulicees With seint -> Physical mactivity cocarine stroke and of colored and of ast gen containing days (and continue place) (see to see the property of the see of the Carlo de la la la compa de Ratio - The state of the Later to the formatty of the second y in the posterior proposed with the first headened Special state of the state of t

*Clinical presentation * I Sudden onset forcial weakness will see the state will the property with the Val 2) Arm drift

[3] Abnormal speech (dysanthrica) by particular Pull 9 Numbress die [5] Blurred vision even vision loss principal vilages ale. (6) Confusion attered consciousness 300-1-2-1 الم الربية واي ليم واي ليم الحالة وثيرة لا الحالة وثيرة 7 Hemiparesis view or لعراما النفى الأيما أو النفى الأسر عن الحسم لع إما الله العنى مع الرجل الليسرى أو العاكم * Monoparesis quillespilles is it allep [8] Visual Loss 191 Aphabia Pulle Buel fire ischeme of Eibst stake is rever city stoppe

Strake of conditions of conditions (CN conditions of condi Stroke 21001660 c get & 2100163 die 2 100 6 he up glest do teles est in PSES stroke 1169/51 * ST Bund Vision - ASL TEN 188 - ASLEW Grand B LET F= Face, Does the face Look uneven? Sten as aire adio & His as I've apol Colice & orig Asymmetry] A = Arm Does one arm drift down? الم الم يق يعتر إلى وفع إلى الم who lebash ligar litera with 8 = Speech Does their speech sound strange ?

Pull is 3 iel ies of Pull & sup The Magazier of the Wall of the Magazier & T= Time It's time to call 911 Design State of the state of th gandista de la secono de la lación de lación

* Hemotillagic Vs ischemic manifestations More common w hemorrhagie (3) Neck pain and Stiffness hemorrhagic 3 its

Stroke Basic Lab. tests to exclude other causes Zinfection Coagulation Studies a PTT, INR and a lower they seemed the said they are CT Scan, MRI (provide draggrostic information earlier than satisfied theopy i parthetic day ECG to determine whether there is atrial fibrillation or not. Clinical manifestations as als it was Diagnosis -INR = international normalised ratio Species > 200 molder to by Schooling of the form

* Management of ischemic stroke 3) Goals of Ht II To reduce the ongoing neurologic injury and decrease mortality and long term disability, 2) To prevent stroke recurrence. 1 => Supportive measures are targeting day ist great your supportive therapy -Chipping A antibiotics es all 1 plans 33 gual : fever supportue ca upilizability -> definited therapy: Antithresorbatic drugs
Ly antiplattets 5 anticoagulants y many mela returned 6 thrombolytic > Supportive and related drawn land - TTO 11 Maintain Oxygen Saturation >94% Ly what is it and how it can be mersured? by purse oximeter [2] Volume and electrolyte correction [3] Treat hypo (150mg/d1) hyperglycamic, Ctreat hyper if glucose > 200 mg/dl by Scinsula) (9) Treat Fever by Cooling Toxygen consemption. I metabolic actualist Lizo 19 tener and 27 [5] hyportension? levice, ischemique of Vansumpton Bi

Ole obip, a ischemic stokeous, à 21 dès ciers e hypertensive emergency ? 15 C3 (*) بنزل الفغ بالله و موى ويون وللنا و في الحالات و 3 min de , ésel 1; 1 12 12 14 134 120 Est 4/3/ 220 Est vie cia hemorrhage is lest fruit siel hie die zur & + erel, blood clot i bis result ful . The cup is 3) -- 200 , 190 No cole die) (det cole (ving gleis 251) 1 blood flowe abld gestle ENOPOSO, sei Small blood vessels wie. ischemic Strake - hemorrhague strake distante hemorchage de aid stall baiel in selpii (*) V bran perfusion un décel stare hemorrhage es beis distaire Limit & hemosthagie me d'i men ille sép resiel distance guidelines ashouse

ischemic strake our de lugels des est + of systolic 220 rege desir , (Coundidate) diestolie 120 rege TIPS Pin a seil cer a exel de Tell I si thrombolytic thempy west si 130 Não (prim de siel Mes of thrombolytic Tist on Gerst of A 185/110 ac biell 18t (su 190 desposes / The twombolytics thrembolytics infusion, jieis ex: > Labetald & seight - nicardipine - ntroprussidens second choice (CN) 215 60 6,13 6 131 Pin 10 1 (Eyanide) (Eyanide) अहिल्या गिर्डिश aliestolia 13) / Lie

The city steel	e of Stroke:
# Hypertension in the acute stage treat or not?	
Treat or not s	December 12
* Ordre 2 190	
* KISHS	
JRP: Compromise cerebral blood flow	and expand the
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14 Live in threatening thereon &	
> Hypertension: geat risk for cerebial h	emorrhage, especially
If a thrombolytic agent is used.	0
e ingalis in a silve i	beloweth the (1)
* Recommendations:	Heigher (1 is)
3 Strain	
the is needed when SPB is >185 or	DBP > 110 mmHg
of ptn is candidate to thrombol	extre therapy or
of ptn is candidate to thrombol > 220/120 if not,	Supplied to the said to
- Short - acting parenteral agents su	ch as labetalol,
mardipore and nitroprusside.	ave towared.
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* Managment of ischanic Stroke	
2 Reperfusion "pharmacological"	
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gent sold - repertusion	
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t-PA (Sie + thrombolytic there	Py
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athlusina at so * Plasminogen * in blood clot in body (in blood) (leio celsit rein) الدُّدوع التي ت يَعَلَ عن الدُّدوع التي ت يَعَلَى عن الدُّدوع التي تعليدي Plasmingen plasmingen blood dot se gel Fill & sofel Fibrin specific Fibrin nonspecific F 1 risk of bleeding ex: Streptok nase First in thrombolytic agents is stroke is --> Streptokinase ~ contraindicated MI de stroke , suis élizable à with Ly streptokinase is still used كانت سية الوضاح أعلى من سنة الوضاح عند Breptokingise jois plaisiscopel Coll is cos cis breeding is color thrombolytic therapy is 2 Zall corporció stroke 13 * لما لكون اجتمالية الحول مذالرج الركمن اجمالية الموت مذادواد وفيها سكنام جزا الدوار ، لع العكم بالمالي ما بمنام الدواء

ous thrombolytic FDA as approval ip to will pall signification is Alteplase so ischemic stroke u to approved the good evidence " guide imes approved were guideline i soffel Presid Paris Por ischemic is approved a fer tenk teplase act slas is ischemitstroke vieg good evidence que of Atteplace Co in pi di Esp 21/ will deas Alteplase) in solo American guidelines (8) Tenecteplase Triplet Tie 1 q Le Streptoknase sie Lie Lip (= pharmacologically ischemic stroke up ale che of afeld a 11 g les thrombolytic therapy leif in Le 20 aprix x & atteplase

: alteplace stesy 4500 1956 contrandication is at ist in a hemorrhagic stroke ~ ~ ~ @ thrombolyte one (ourp) of the dellication (3) (سور القالم) دوَر و لغل عليها الله الله الله * ثمن سع اعرف إذا الخلطة جمديرة عمر لا ١٤ من سالة الدُعرافِي (يعني بدا يه خصورالاعراف بعسرها بداية الحاه) acid about levery of is thrombolytic therapy (يعني جلفة مع عدها وحت لي 6 ساعات أوالي) Land of Syngtons when 2 x 5 ha cé à les us is l'abli es l'élé thrombolytic agents TIST 3 @ led thrombulytres Pist 200 Cipil de t-PA sleefed & (more common) الله من إعطاؤه سادع الازات t-PA of mg/kg over 1 hrs (IV infusion) w 10% given as initial bolus over 1 mins. t-PA stècs us à ischemic stroke cipe é uspi antithrombotic is sheet dis sel 24 it cos Ly antiplatelet or antragulant

* Reperfusion
The state of the s
= Acuto +++
t-PA protorably within 3 his of presentation
(unto 45 hrs.) at 0,9 mg/kg over one hr.
(upto 4.5 hrs) at 0.9 mg/kg over one hr.
Il a second le Heatt Diotoral Can De
Summow Zed as
The second secon
4 Onset of Symptoms within 3-4,5 hrs
the good the set of th
1, CI scan to rule out hemorrhage
The state of the s
Ly Meet inclusion and exclusion criteria
The state of the s
Ly Administer t-PA 0.9 mg/kg over 1 hours \$\over 10%
given as initial below over I mm.
1 Court the state of Contract of the Contract
Ly Avoid antithrombotic (anticoagulant or antiplatetet)
therapy for 24 hrs
A late of the second base two is
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(16) orpl3 Inclusion and Exclusion Criteria For Alteplace use in acute is chemic Stroke inclusion and exclusion criteries > or stoll a efect is little Church presention on Suggestive of Sight Inclusion Exclusion + of some of the first of the second of على ما ما دول ما prestried (will e) Alteplace set releading is e) Alteplase Inclusion Orderia 11) 18 years of age or older 2) Clinical diagnosis of ischemic Stroke Causing a measurable neurological deficit of mall and the telephone 3) Time of Symptoms anset well established to be < 4.5 hr before + H would begin recent we a an elevated PT (> 13 cando) or INR(> 13) Ficlusion criteria = Contraindications Absolute Contraindication Relative Contraindications (م في تقييم لكل حالة عم عدا معالمًا الله عنه الله المالة and this of blooding a the bleeding risk paried clet risk of bleeding is IN Sort Contraindication CPLO is a first francis to the total of the first of the first

Exclusion Critoria = Absolute contraindications -> Evidence of multilobar infarction on CT scan of the brain (>113 Cerebral hemisphere) prior to treatment. (Subarachnoid hemorrhage) even w a normal head CT [20] 15 hemorrhage one del de arup Off We CT 10 # à lu de la la la la pt hemorrhage qu'us CT ais MRI do sensitivity jet le 1 : risply je aven i co lo (25) 5 Clinical manifestation of SAH -> Active internal bleeding known blooding diathesis, including but not Limited to (a) platelet Count Less than 100 x 103/mm3(100 x 109/L) (b) heparin within 48 hrs w an elevated aPTT (c) Current oral anticoagulant use (unitarin) or recent use w an elevated PT (> 15 seconds) or INR(>1.7) thrombolytic rest Joseph 10 bleading one ais x Antihombetic siepus , mensis pais el zu elie La agents Lab. tests , a anticongulants in Two destil all 15] Gindicating congulation status association status

thrombolytic agentices ; i contraindicated stay of

- Lumbar Puncture within 7 days . History of previous intracranial hemorrhage. . Intraoranial neoplasm, known AVM or aneurysm. . SBP > 185 months or DBP > 110 mm Hg at time of the or Ptn. regains aggressive 4th to reduce BP to withm these limits

devoiced sit ale risk of the Put 7 July Lumbar puncturest bleeding 3 thrombotic therapy bein I published 1) SBP) 185 mm HgCB 131 6 SBP (185 mm Hg Die Col DBP > 110 mmHg 00 13; 6 DBP < 110 mmHg raise Col 12 absolute contraindocations على العاقف خلال الم 4.5 hr عام فعراق أعدله وأقله we (and sepions) véri 3 830 à

Relative Exclusion Criteria - Relative Contravdications -> Only minor or rapidly improving strake symptoms Tomo à su de A, ad stroke Clark a 10 9 4 TIA i transient is chemic attack on a cers At 199 order of the property of the select 199 to the 1224 telepostristalplical with stocker light Linday rady of the Thirty of the Market parties of the Perso 30 in Si delprin agent TIA Zulp cist & thromblythe area cer of 151 as in the court 151 Anombolytic therapy can risks I Dipis , 189> Homely 980 +10 So Homely , 20 Recent Gl or Urmary tract hemorrhage
(within 21 days) Wip of a Chip ris Recent * Absolute contrainde actions hemorrhye sins tulp * Relative contrainde homorrhage sic CB: Queldi auxil oriel * 13-21 sp Absolute Cl Pelature Cl Polature Polature Cl Polature Altephie de la color 3 porte sus iste de copelius e (4.5 his me netical) Additional Exclusion Oriteria for ttt blu 3 and 4.5 his

_ age > 80 years risk of bleading is citis a 80 più cul con il ل مربع فوعد 80 منة واجمه كل 3 اعالة وعافي عندم Absolute or Relative I my thrembolytic declies le 170 ven 8/12/5 ... 2/2/3 ven 6/12/ Juse of oxal antroogulants regardless of INR

Santroogulant Mint & Absolute Cl aux

Jule INR EIB 1:1 Più objet de 4.5 hraise _ 2151-3 no sept con 13,4 CI 10,000 anticoogulants NIHSS > 25 9 25 cie 136, 155 NIHSS + 16 (25) , Combination of ischemic Stroke and diabetes The hotel is the tell the tableody in Appen (2) are leterating a transfer of the later of th

monteing of any adverse effects Denefit of therapy we start ail derst as de su cast & The Estimolytic therapy do strake in aire a Fibrinolytic therapy see we * and store I cope ous is Eigs and resolute of manfestation dup as 2000 5 benefits restal in consider us la -I & montoring of A.E Westura land cup a bleeding is bleeding - A. E 15 separ coli ile de 5 bleeding sop Antithrombatic agentico breeding of conche si apply of livie a sempty sis us of the way of the color of blood in stool of the 4 bleeding in upper GI nose bleading a hematuria a bleeding gums of wie Is breeding in UT

a Close is a Intracranial hemorrhage a sin stept cie ¿ l'il neurological function ce sol; deterioration est. severe headache cèvel is up do * Rick at the a Fibrinolytic therapy 1 bleeding [2] intracramed hemorrhage (3) Systemic bleading 19 hematemesis, guarac -positive stools, black, tarry stools, hemostomes formation, hematuria, bleeding gums and posebleeds Allergic Non-allergic

Mon of angioedema by t-PA? (25) allergic angioedema by t-PA JP **

non-allergic through a The allegative the allegative the state of the the Level of the Decorated as a second to a

- Streptskingse Absolute Cl of stroke Tenectephise

Pir wery good evidence LENE

FDA is approval or lein 5 reperfusion his ver in ait repes de * Other reportusion Strategies [2] Thrombolytic therapy + thrombectomy thrombus as the Intra-arterial go Thrombectomy Jei We -- in a IV Atteplace 1 intin Zista Zuts &* thrombeotomy + IA # Alteplase IV atteplace more recommended, thrombeetenry risas IA thrombolytic steel 15this lo 4

* Other antithrombotic therapy in a cute state of stroke Aspirin Aspirin - more effective - I mortality from stroke and I deterioration or irreversable neurological of stroke Quis stroke lais sulvis of the suit as int G acute State Me de à wife some con the section of thrombolytic is t going on a risk trends aspirm ded to thrombolytich the thrombolytic theogy is is aspirin we will Central Demans =) Farly aspirin (300 mg/d) Started within 48 his of the event and continued for 2 weeks, but never be given within 24 hrs of t-PA use.

=) Anticoagulant Heparin reperfusion is so a sould as prophylactic Pin heparin Piny stime pello? At as prophylatic as the aputic الغرور بالجرعة =) Low dose 500 unit/kg 2-3 times to prevent VTE (veneus thromboembolism) 24 hrs after alteplase =) Full dose for perfusion: No sufficient evidence to recommend ratine use there were the second of the s Starty sepan (Bosongla) Started With 48 his ned be given without yet been the PA core

* prevention of recurrence * secondary prevention primary prevention Secondary G 15 Pro of gaples الم الم على على على النابيع أمنع جدودها من ens tous fait faire que las السرارو GPT 85 prevention is charges of the doi of at risk of thrombus tometion will down if I as prophylaxis mediculary is G Antithrombotic therapy (anticoagulants and antiplateets) as prophylaxis de v thrombolytic 1: ing profile la lies + cardioembolic stratel es le livre Tulidia* 9 atrial fibrillation venous thromboembalismon? - heart a granderica الحرن الدركولها prophytexis, anti Coagulant Clotting Ladors malateletaggregative out is a arterial thrombes is line Antiplateleti os prephylaxisos lo cie rupture me Leisu Atheroscherosis up Zulis diet * Antiplatelets on prophylaxis so 2, 03; c 4,211 Jes mes Anticoagulant as prophylaxis - tist condicembelic statalet & Antiplatelets

For non cardioembolic strakes For Condidembolic Strokes Antiplatelets Articoagulants 49 Aspin 50 _ 325 mg/d Ly abrecon JA The Jacks cts maintain INR of 2.5 4 Clopidogrel 75 mg/d (2=3)のようとい 5 Apixaban 5 mg tulke daily Ly Aspirin 25 mg + Dipyridamol

(extended release) Ly Dabigatran or

200 mg

200 mg/2 in - Riveryoxaban

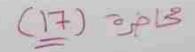
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Urinary incontinence

Urinary incontinence (UI): the complaint of involuntary leakage of urine, may be associated with other bothersome lower urinary tract symptoms such as urgency, increased daytime frequency, and nocturia.

The of th

Urinary incontinence

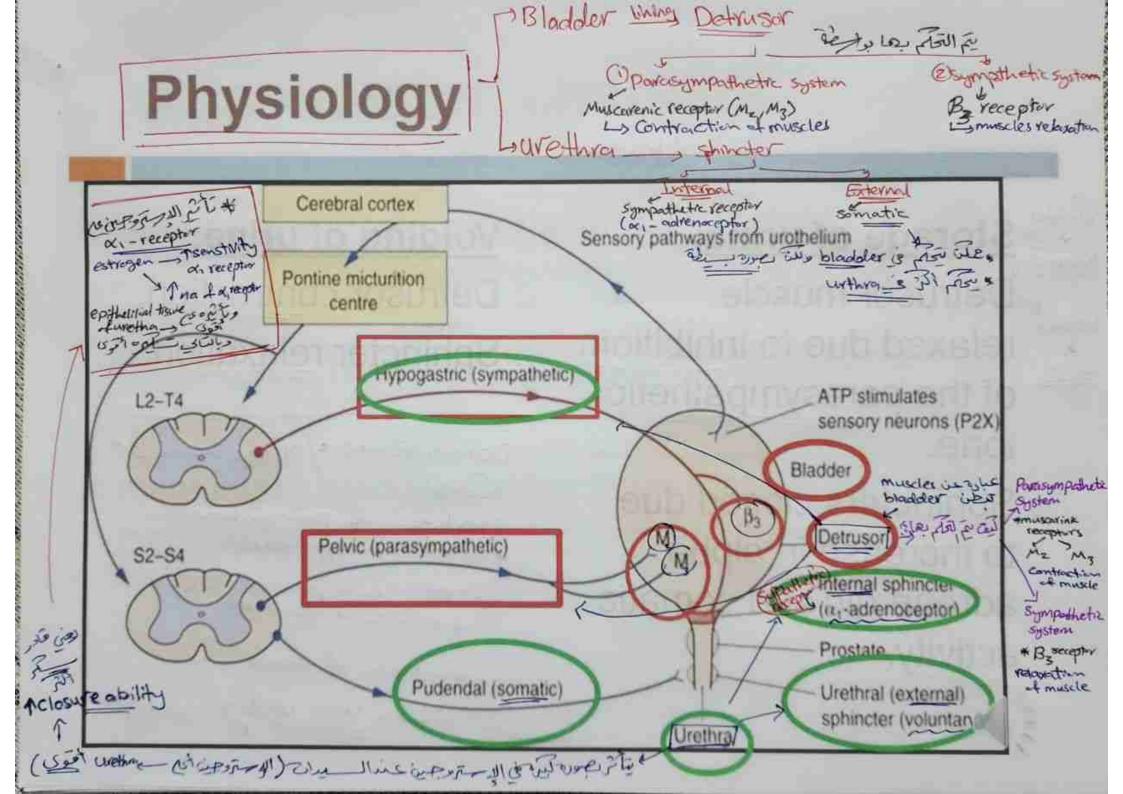
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Common condition among elderly patients affecting 40% community dwelling patients.

 Has economic, medical and psychosocial المحديدة المادية consequences.

Not an inevitable consequence of aging. It is a pathologic condition that, when rationally approached, usually can be cured.

للالف وي ع الريض أن يعالي وما عبرها جزر من اللبرين العرومانعًا لج * اجناعادفية أمرافهالك والسرطان



Storage of urine:

Detrusor muscle:

relaxed due to inhibition of the parasympathetic tone.

Sphincters closed due to increase in alpha adrenergic and somatic activity.

Voiding of urine:

- Detrusor contraction.
- Sphincter relaxation.

Detrusor view ~ 1 / Storage of while 5 4

Yelaxed

* Inhibition of parasympathetic.

* activation of sympathetic

As activation of sympathetic

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* activation of sympathetic

* activation of somatic

come storage a te curine voiding = 11 #

القيرات التي تعدث عع المعدّ بالعرب الإن تعداها المعارب المعرب المعرب المعارب المعرب ا

Decrease in bladder compliance (bladder capacity is 400 ml in adults compared to 300 ml in the معدار في المعال عن إرها م الفي المعالم المعارف والمعارف والمعالم عن المعالم عن المعالم عن المعالم عن المعالم ا Maximal urethral closure pressure is reduced (estrogen?)

Sinvoluntary bladder contractions (detrusor muscle instability one in the diameter and the contractions) instability) elederly upe [all we pain le diop in / as use in the last of the painting of a sus in the last of the painting of a sus in the last of the sus in the last of the sus in the last of the Dove @ BPH 3

Age-related prevalence

Cuo	100 51 Janvale us U.J. Cap (supp) Females (Jun	n UI II risk forctor	ing is / In general s	K
	Age group	Prevalence	ld ni separati	
	Females		the Hillim DOLLE	
	Young age	20-30%	homic UI vot support of the	
	Middle age	30-40%	* إذه مع العربتزير الدجمانية	
	Old age	30-50%	Significant one	
	Old age (nursing home residents)	50-75%	instability) **	
	Males			
	Over all prevalence	10%		
	Selderly (nursing home residents)	>50%	4(3	

Classification of Ul



Persistent

Acute UI

Associated with an acute medical problem:

Intections

- > Cystitis. Fundespecially at females
- → Vaginitis.
 - ⇒ Vrethritis.
 - Acute confusional state.
 - Drug related (e.g prazocin)

> Urge incontinence

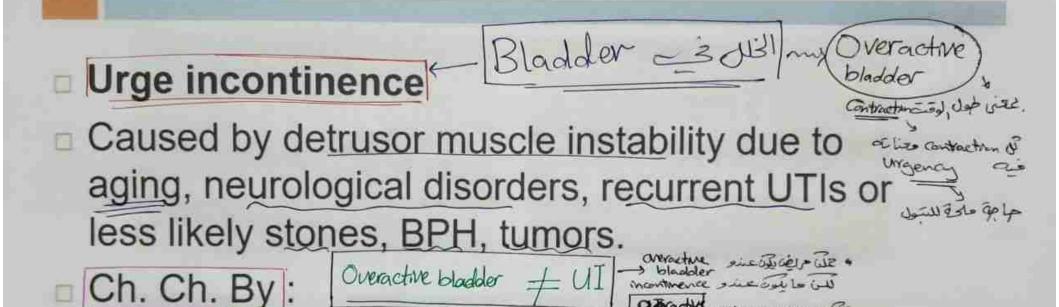
Stress

Overflow incontinence

urge + stress

urge + overflow

Persistent incontinence



Frequency and urgency +

- involuntary voiding that is preceded by a warning of a few seconds to a few minutes.
- Nocturia and enuresis.

Clinical Presentation of UUI Related to Bladder Overactivity⁴

General

Can have bladder overactivity and UI without urgency, if sensory input from the lower urinary tract is absent. Can have bladder overactivity without UI (called overactive bladder or OAB).

Symptoms

OAB is a clinical condition characterized by urinary urgency with/without incontinence, urinary frequency, and nocturia. Patients with OAB typically present with symptoms of sudden and compelling need to urinate, which is difficult to defer (urgency), involuntary urine leakage with sensations of urgency (UUI), frequency (eight or more micturitions in 24 hours), and nocturia (one or more awakening per night to void).²

Uradynamic Studies

لع فحص المستول المستولي في المثارة

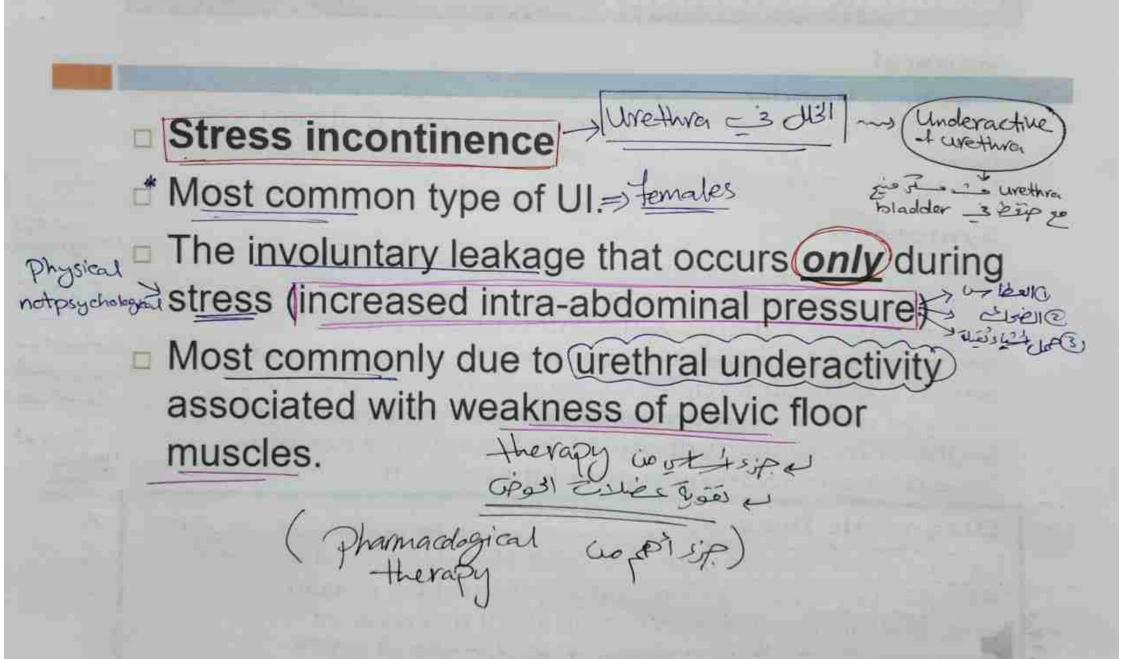
Urethra Closure

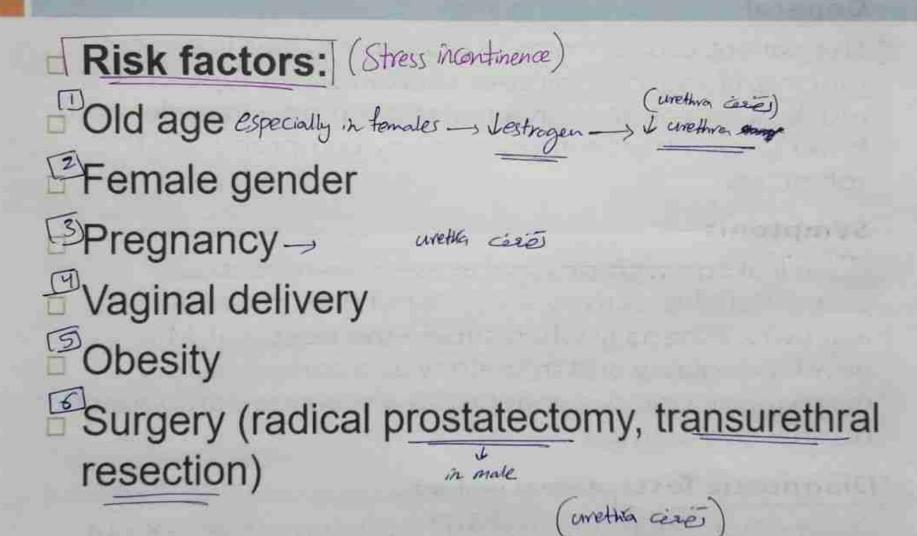
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وَعَلَوْ البول (وورَمَاهِ وَجُود ما كالمحال أو لاكا Diagnostic Tests (July) (July)







Clinical Presentation of SUI Related to Urethral Underactivity⁴

General

The patient usually notes UI during activities like exercise, running, lifting, coughing, or sneezing. This type of UI is much more common in females (seen only in males with lower urinary tract surgery or injury compromising the sphincter).

Symptoms

Urine leakage with physical activity (volume is proportional to activity level). No UI with physical inactivity, especially when supine (no nocturia). May develop urgency and frequency as a compensatory mechanism (or independently as a separate component of bladder overactivity).

Diagnostic Tests -> Clinical manifestation

Observation of urethral meatus (opening) while patient coughs or strains

retention my Ce Overactive un Urethra 2 30131

Overflow incontinence

A consequence of urethral overactivity or bladder

wether under activity.

Overflow incontinence results when the bladder is filled to capacity at all times but is unable to empty, causing urine to leak from a distended bladder past a normal or

of - wrethra , Tille bladder *

even overactive outlet and sphincter.

Usually there is an increase in postvoid residual urine

volume.

Urethral over activity is more common in men b/c of prostatic abnormalities.

Risk factors Overflow incontinence

Urethral overactivity:

- Gender (male)
- BPH, prostate cancer, or abdominal-pelvic

Surgeries. " Chuly in ed of method - Stress maintmence of the el Wiethous ost; Closure rues,

Bladder underactivity: neuropathy bladder underactivity

lower spinal cord injury, multiple sclerosis, or radical pelvic surgery.

Clinical Presentation of OUI Related to Urethral Overactivity and/or Bladder Underactivity⁴

General

Important but rare type of UI in both sexes. Urethral overactivity usually due to prostatic enlargement (males) or cystocele formation or surgical overcorrection following antiurethral underactivity (SUI) surgery (females).

Symptoms

Lower abdominal fullness, hesitancy, straining to void, decreased force of stream, interrupted stream, sense of incomplete bladder emptying. May have urinary frequency and urgency, too. Abdominal pain if acute urinary retention is also present.



Signs

Increased postvoid residual urine volume.

Investigations:

- Complete medical and medication Hx.
- Physical examination: abdominal / pelvic/genital/prostate,...etc.
- Neurological exmination
- Urinalysis.
- Urodynamic studies: post void urine, cystometry, urethral pressure profilometry, uroflometry,...etc

 Others: voiding diaries.

Comparing urge and stress

TABLE 81-2 Differentiating Bladder Overactivity from Urethral Underactivity-Related UI							
Symptoms	Bladder Overactivity (UUI)	Urethral Underactivity (SUI)					
Urgency (strong, sudden desire to void)	Yes	Sometimes					
Frequency with urgency	Yes and Helline	Rarely					
Leaking during physical activity (eg, coughing, sneezing, lifting)	No nouse lession	Yes many H					
Amount of urinary leakage with each episode of incontinence	Large if present	Usually small					
Ability to reach the toilet in time following an urge to void		Yes					
Nocturnal incontinence (presence of wet pads or undergarments in bed)	Yes Warring	Rare					
Nocturia (waking to pass urine at night)	Usually	Seldom					

*Drugs that may precipitate or aggravate existing voiding abnormalities

TABLE 81-1 Medications that Influence Lower Urinary Tract Function						
Medication	ions that Influence Lower Urinary Tract Function Effect					
<u>Diuretics</u> , acetylcholinesteras inhibitors	se Polyuria, frequency, urgency					
a-Receptor antagonists	Urethral relaxation and stress urinary incontinence in women					
a-Receptor agonists contraction						
Calcium channel blockers	Urinary retention					
Narcotic analgesics الريض فاقترابوعي (مثن واعي) مراك العريض فاقترابوعي (مثن واعي) مراقي	Urinary retention from impaired contractility Functional incontinence caused by delirium, immobility					
Antipsychotic agents	Anticholinergic effects and urinary retention					
Anticholinergics	Urinary retention					
Antidepressants, tricyclic	Anticholinergic effects, a-antagonist effects					
Alcohol	Polyuria, frequency, urgency, sedation, delirium					
ACEIS TO SILO STORE SILO SILO SILO SILO SILO SILO SILO SILO	Cough as a result of ACEIs may aggravate stress urinary incontinence by increasing intraabdominal pressure					

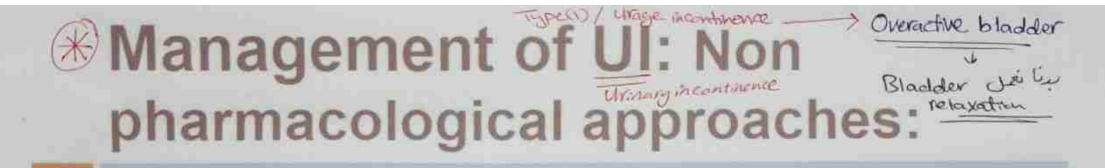
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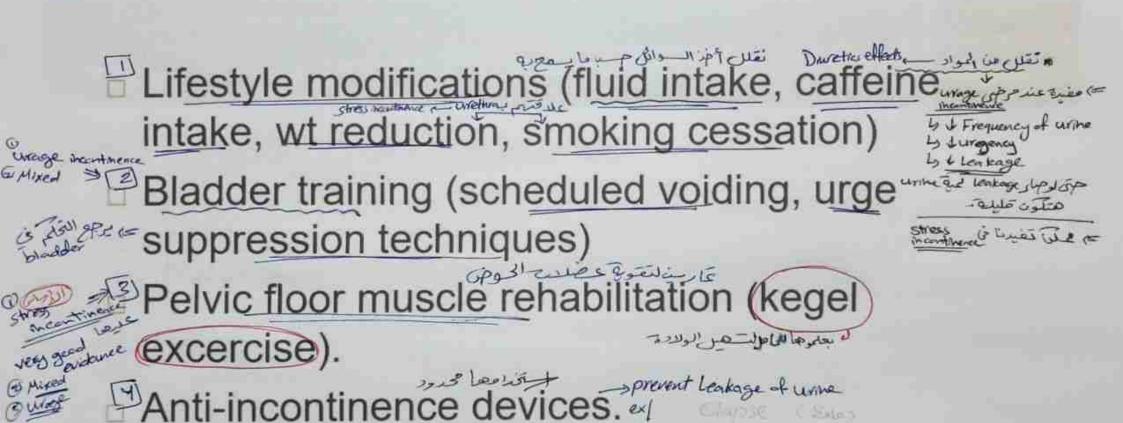
Management

Goals of therapy: California of all apresentes sit incises Ul aprox Restoration of continence. · les aples urgency me urgencontinancies * Reduction of UI episodes. nocturia, Polyuria, Frequency الله منا والله عنا نقل من هذا المالل Prevent complications (skin breakdown) Minimize adverse events of treatment. Complete restoration of continence all Ups in the cap with the OP UI 3 W 11 * essent me ou il we o stop the judicipation of psychosocial سينًا الخامل تقلل عن جذا الرجن (تلون (الرجوما محدودة) _si an chteril Lione * Complications associated w incontinence

1, especially dose-veloted of skin

Loskin breakdown, its consquency





Surgery for SUI.





Pharmacological treatment

Urge incontinence __ , Overactive budder

5 bladder , nanskus*

Parasympathetic

Contraction muscrenic receptor

block dais sal *

Anticholivergics

Antispasmadics

- relaxation
- of bladder
- -> & Frequency
- s & urganey
- Lepisader

Sympathetic

relaxation

B, agonists

Mirabegron

TCAs

Botulinum toxin type A

Estrogens

Alpha adrenoreceptor agonists

Duloxetine

Bethanechol

Alpha agonists?

Desmopressin

Anticholinergics ~ our release transformat get

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Pharmacological treatment: Urge Ul

* هذه الأدوية ما عندها عزومًا ع بالعقالية للن عندها فروها ع د (A.B)

- Anticholinergic/antispasmodic drugs have proved to be the most effective agents in relieving UUI symptoms due to:
 - Suppression of premature detrusor contractions.
 - Enhancing bladder storage.

dry mouth - & V Saling

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Odry mouth, dry eyes, Chts effects

O GIT ~ Constipation

(5) blurred vision

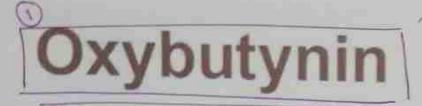
(6) antihistamme effect

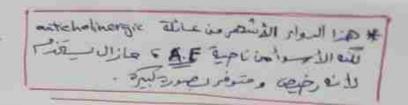
(7) ac-blocking effect checis hypotensian

Orthostatic
hypotensian

* Contraindicateal

W glucoma





- Consider systemic anticholinergic S/E (dry mouth, problems associated with it??)
- Consider histamine H1 and alpha one receptor blocking QUE AF . Teur em immediate release preparation - sup as is as is is to usix 19 A.Evor He We aid

These effects can be reduced by:

starting at low doses (2.5 mg twice daily) and escalate very slowly (every month increase by 2.5 mg daily)over

The use of extended release (5-30 mg daily) instead of

mmediate release preparations (how this can help in

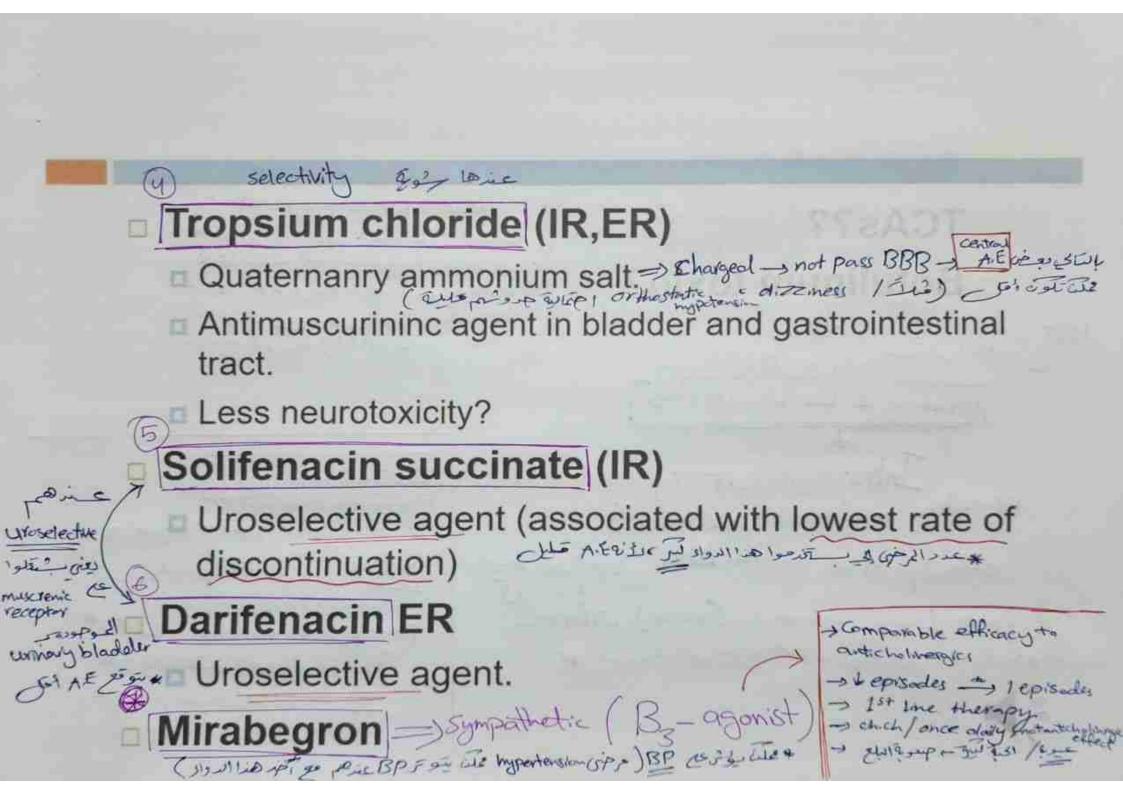
reducing adverse effects to the drug?

Extended release (Transdermal) - oral extended release (Transdermal) مروع موالا يصر إعراد أو حسس عن المنافية (سواد كاني an propary) أو um benefit 4weeks . Oxybettyningel fiest jegin * upper arm , abdominal is a fortransdermal rise o topical 6 2 00

A. E profile in mis po immediate release and extended release especially for oxybutynin:

Oral extended release of alabutynin - in The dest AE partille immediate release

Extended release transdermal oxybutynin: Given twice weekly. Less systemic effects compared to oral preparations. Pruritus and erythema are quite common. Tolterodine (IR, LA). * Immediate release of oxybitymin more A.E Better tolerated than oxybutynine. than immediate release of to Horosoline e tolterodue Consider pharmacogenetics / Maximum benefit 4-8 weeks.



+ Filed Erec

TCAs?? Designamine
Amitriptyline

Botulinum toxin?

refraction of the of UUI (urge)

Introvascular inj.

relaxation (bladder is exp rel)

effect / 4-6 months (severe), infaction

or in relaxation (severe), infaction

or in refraction (severe), infaction

have anticholinergic effects

spend visit of curething som *

other anticholineración pta a lesist

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lesistes de les de de de lesistes de lesistes de lesistes de les les de le

Botulinum toxin

Botox Grin Botox

Botox Grin Les *

Paralysis of muscles Les *

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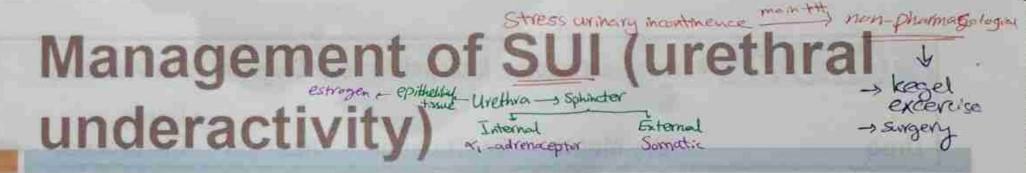
Paral

TABLE 81-	Dosing of Medi	cations Approv	ed for OAB or UUI	en = 1= है। ठेंक् प्रोर्ट कि	
Drug	Brand Name In	nitial Dose	Usual Range	Special Population Dose	Comments
Anticholinergi	ics/Antimuscarinio	CS		* عام أي أساس الحاراللدوية ؟!	
Oxybutynin IR	Ditropan 2	5 mg twice dally	times daily	A.E profiles - deissil	Titrate in increments of 25 mg/day ever 1–2 months, available in oral solution
Oxybutynin XL	Ditropan XI. 5	-10 mg once daily	2 string of the dully.	Certain degree renal impairment	Adjust dose in S-mg increments at weekly interval; swallow whole
Oxybutynin 105	Oxytrol		3.9 mg/day apply one patch twice weekly	Significant DDI Lasine Boot & 3	Apply every 3 to 4 days; rotate application site
Oxybutynin ger 10%3	Geinique		One sachet (100 mg) topically daily	Immediate release = 2 estimation is the Extended release = Once daily	Apply to clean and dry, intact skin on abdomen, thighs or upper arms/ shoulders; contains alcohol
Oxybutynin gel3%	Gelnique 3%		Three pumps (84 mg) topically daily	المنعف ما تلسراك وكارم	Same as above
* Tolterodine IR	Detrol		1-2 mg twice daily	1 mg twice daily if patient is taking CYP3A4 inhibitors, or with renal/hepatic impairment.	
Tolterodine LA	Detrol I.A		2–4 mg once daily	2 mg once daily in those who are taking CYP3A4 inhibitors or with renal/hepatic impairment	Swallow whole, avoid in patients with creatinine clearance < 10 mL/min (0. mL/s)
Trospium chloride IR	Sanctura		20 mg twice daily	20 mg once daily in patient age ≥75 years or creatinine clearance ≤30 mL/min (0.5 mL/s)	Take 1 hour before meals or on empty stomach, patient age ≥ 75 years should take at bedtime.
Trospium chloride ER	Sanctura XR		60 mg once daily	Avoid in patient age ≥75 years or creatinine clearance ≤30 mL/min (0.5 mL/s)	Take 1 hour before meals of an empty stomach; swallow whole

	Solifenacin	VESIcare	5 mg daily	5-10 mg once daily	5 mg daily if patient is taking CYP3A4 inhibitors or with creatinine clearance ≤30 mL/mln (0.5 mL/s) or moderate hepatic impairment; avoid in severe hepatic impairment	Swallow whole
	Darifenacin ER	Enablex	75 mg once daily	75–15 mg once daily	7.5 mg daily if patient is taking potent CYP3A4 inhibitors or with moderate hepatic impairment; avoid in severe hepatic impairment	Titrate dose after at least 2 weeks; swallow whole
*	Fesoterodine ER	Toviaz	4 mg once (daily	4-8 mg once daily	4 mg daily if patient is taking potent CYP3A4 inhibitors or with creatinine clearance <30 mL/min (0.5 mL/s); avoid in severe hepatic impairment.	Prodrug (metabolized to 5-hydroxymethyl tolterodine); swallow whole
	β ₃ -Adrenergic	Agonist				
*	Mirabegron ER	Myrbetriq	25 mg once daily	25–50 mg once daily	25 mg once daily if creatinine clearance 15–29 mL/ min (0.25–0.49 mL/s); avoid in patients with ESRD or severe hepatic impairment	Swallow whole

TABLE 81-4 Adverse Event Incidence Rates with Approved Drugs for Bladder Overactivity®

Drug	Dry Mouth	Constipation	Dizziness	Vision Disturbance
Oxybutynin IR	71)	15	17	10
Oxybutynin XL	61	13 outling	6	14
Oxybutynin TDS	e D	magin levil.		/03qm1 u
Oxybutynin gel	10		3	3
Tolterodine	55	opn abbel	2	3
Tolterodine LA	23	6 William		
Trospium chloride IR	20		NR NR	
Trospium chloride XR		ege evilizo	1.413	No.
Solifenacin	ZU	TE STE STI		
Darifenacin ER	24	18	2	2 2 2
Fesoterodine ER	27	5	NR	3
Mirabegron ER	margie effect (ple	(aebo)	3	NR 🧠



The main therapeutic strategies are to:

- Improve the urethral closure mechanism by stimulating α-adrenergic receptors in the smooth muscle of the bladder neck and proximal urethra,
- Enhance the supportive structures underlying the urethral epithelium, or
- Enhance the positive effects of serotonin and norepinephrine in the afferent and efferent pathways of the micturition reflex.

SUI gen us 301 Tour or rerepinephores, serotonin as de to sol south se to d

⇒ deporession

⇒) pain management

⇒) mictwrition reflex

Significant DDIs ?? = si cele estes sono lugle l'és des des metabolism of apreced the wife as a file estil usig sono lugic lutis a sol fer est A.E is life concientiff (enzematie inductive els est conc. des we de effect is 2 significant of to of in ill som effect ce 2 1 12 & significant Je oro & (Levier Mrisk Wielled) A. Teffect _, TA.E _, taxicity Is effect _ subtherapuetic conc. significant of interating of a =

4 DDI significant de DDI cost souceil * => Applications Micromedex - Medscape pharmasist DDI Checkers =) Books I la works we do the Stockley's Drug Interactions DDTs as appendixes es as => Clinically non-significant (Minor

=> Chically Significant

Contraindicated

ه محدودة جرداً

ستلمع أن نبعًا على وقد على وقد المسب مي ملكم المواد ما وراد ما في وأنا معلى وانا معلى المواد مي المواد يحيى والمواد يحي

Duloxetine

 Duloxetine, a dual inhibitor of serotonin and norepinephrine reuptake, was shown effective in reducing incontinence episodes.

المجان ما بتقول هذا الدواد كالمرخي ما بتقول * High rate of discontinuation (nausea,

headache, constipation)

Consider gradual titration and tapering upon discontinuation

Sul pues & tec | vale of the Sul pale of the Sul part of the start of

Estrogens => have modest efficacy
If estrogens combination w x-agonist -> Tellicacy

Used in women especially when SUI exists with urethritis and vaginitis due to estrogen deficiency.

Effects:

- المالي مؤيد في ملا عالم المعالم المعا
- Increase numbers and/or sensitivity of urogenital a-adrenergic receptors. > 1 Closure of internal sphicter
- ONLY Topical preparations should be used: vaginal creams and vaginal suppositories.

(orally) and systemate Tis well (Thrombosis Dery / after HOLL + Hot flashing - 4 [Cp) = 1 a point of che 11 = 13 13 11

Alpha-adrenergic receptor should sphincter is some a - agonist * Alpha-adrenergic receptor agonist * decongestaleio to airs copies of a congestaleio to airs copies of a co

- Include ephedrine, pseudoephedrine and phenylephrine.
- Adverse effects include hypertension, headache, dry mouth, nausea, insomnia, and restlessness.
- Contraindications include the presence of hypertension, tachyarrhythmias, coronary artery disease, or myocardial infarction.
 - Combining these drugs with estrogen therapy was superior to monotherapy in women with SUI.
 - Generally not recommended choices.

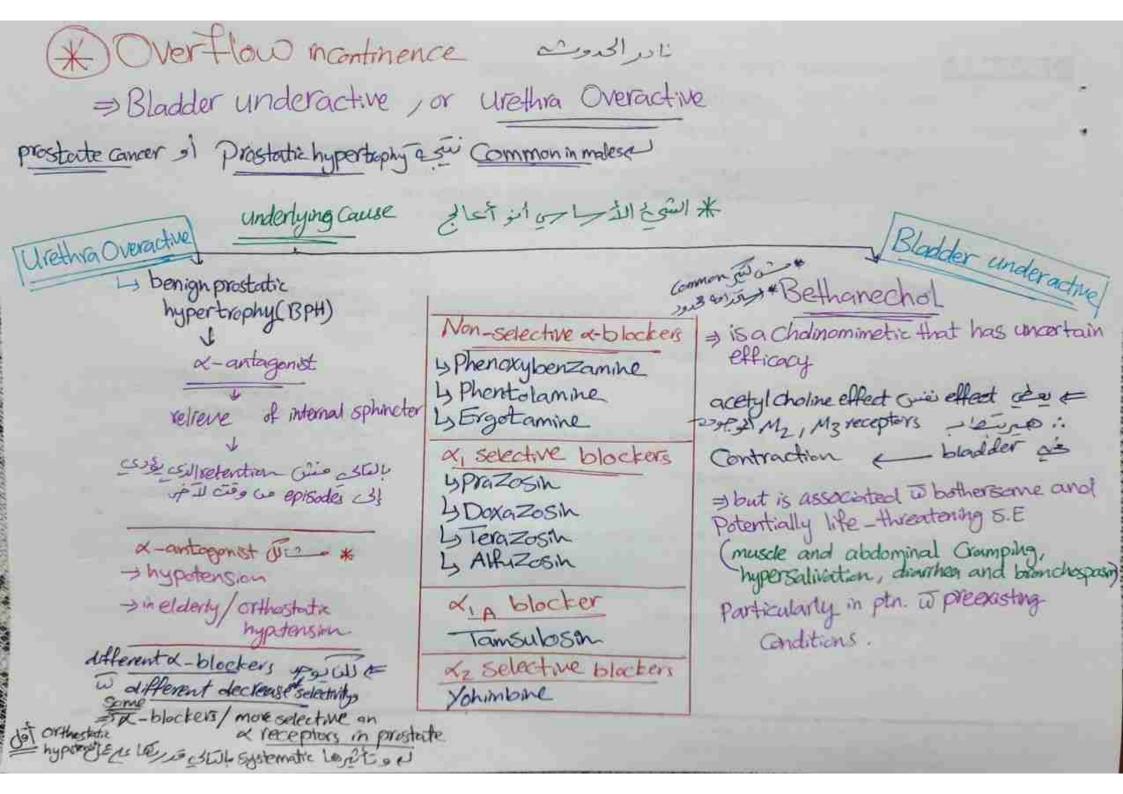


	TABLE 88-4	Pharmacotherapeutic (Options in Patients with Urinary Incontinence			
*	Type	Drug Class	Drug Therapy (Usual Dose)	Comments		
Overactive blad- der		Anticholinergic agents/ antispasmodics	Oxybutynin IR (2.5–5 mg two, three or four times daily), oxybutynin XL (5–30 mg daily), oxybutynin TDS (3.9 mg/day); (apply one patch twice weekly), tolterodine IR (1–2 mg twice daily), tolterodine LA (2–4 mg daily), trospium chloride (20 mg once or twice daily), soliteracin (5–10 mg daily), danfenacin (7.5–15 mg daily)	Anticholinergics are first-line drug therapy (corybutynin or tolterodine is preferred)		
		Tricyclic antidepressants (TCAs)	Imipramine, doxepin, nortriptyline, or desipramine (25–100 mg at bedtime)	TCAs are generally reserved for patients with an addi- tional indication (e.g., depression, neuropathic pain)		
		Topical estrogen (only in women with urethritis or vaginitis)	Conjugated estrogen vaginal cream (0.5 g) three times per week for up to 8 months. Repeat course if symptom recurrence, or use estradiol vaginal insert/ring [2 mg (one ring)] and replace after 90 days if needed.	Marginally effective, few adverse effects with vaginal cream and insert		
Stress	Stress	Dukoretine ^a	40-80 mg/day (one or two doses)	Even though not FDA approved, duloxetine is first-line therapy, most adverse events diminish with time, so support patient during initial period of use		
		a-Adrenergic agonists	Pseudoephedrine (15–60 mg three times daily) with food, water, or milk. Phenylephnne (10 mg four times daily)	Pseudoephedime and phenylephine are alternative first-line therapies for women with no contraindication (notably hypertension); phenylpropanolamine was the preferred agent in the class until its removal from the U.S. market in 2000.		
		Estrogen	See estrogens (above). Works best if urethritis or vaginitis are present.	Considered a less-effective alternative to co-adrenergic ago- nists and dulowine. Combined co-adrenergic agonist and estrogen may be somewhat more effective than co- adrenergic agonist alone in postmeropausal women.		
		Impramine	25–100 mg at bedtime	Impramme is an optional therapy when first-line therapy is inadequate.		
	Overflow (atonic bladder)	Cholinomimetics	Bethanechol (25–50 mg three or four times daily) on an empty stomach	Avoid use if patient has asthma or heart disease. Short-term use only. Never give IV or IM because of life-threatening cardiovascular and severe gastrointestinal records.		

IR. immediate-release. LA, long-acting TDS, transdernial system XL, extended-release. Investigational Doses provided are those best supported by clinical trials to date.

(20)0/10/3

Contraception

معضور أو مستمد منع الحل

- Contraception: is the intentional prevention of pregnancy..
- Contraceptives: pharmaceuticals and devices that prevent pregnancy.
- ► Ideally, the contraceptive should:
- ▶ Preserve fertility ~ ﷺ
- المِسَارِ عانع الحل المنارِب وس Not cause adverse effects المنارِب وسلام المنارِب وسلام المنارِب المن

عفرفة طريقة على أدولاً وملاحدة ومناه وين المراع المراع المراعة والمراعة وا

Menstrual cycle physiology

* تبدأ في عبرة البلوخ *

of menopause in Cop in 10 &

- Starts around age (2) years and continues till age o (50)
- Involves the vaginal discharge of sloughed endometrium called menses.
- Median cycle length is 28 days but it can range from 21-40 days.
- 3 phases
 - Follicular (preovulatory).
 - ② Dyulatory.

Regulation

This stimulates the anterior pituitary to release FSH ad

LH (gonadotropins).

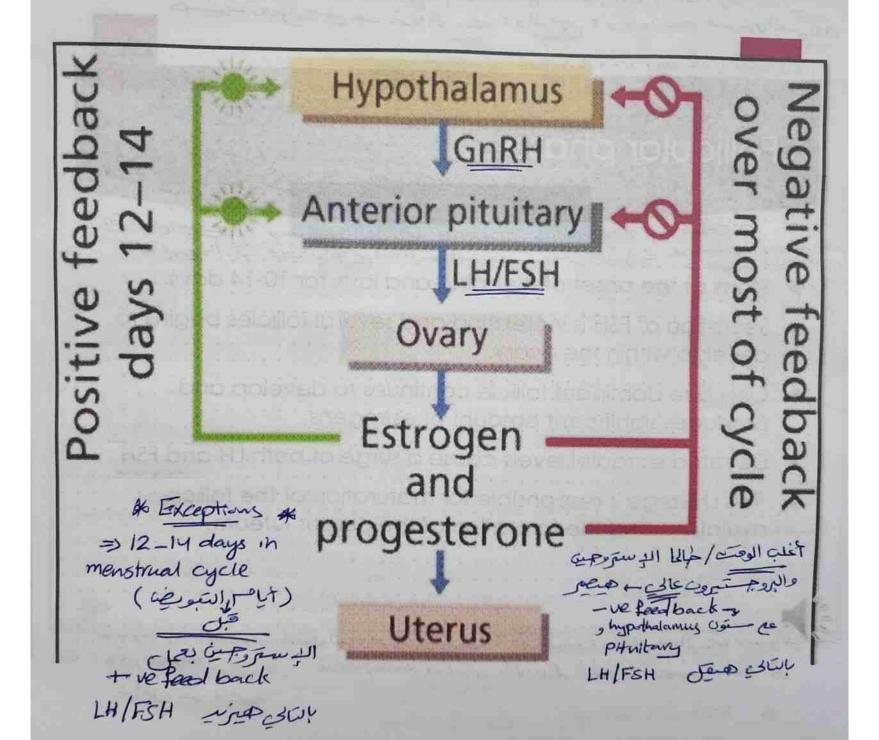
Ly Follicle-stimulating harmen

Ly Luteinizing hormone

These hormones stimulate the ovaries to produce estrogen and progesterone. من menstrual agale المحالة المعالمة المعالمة

Estrogen acts on the hypothalamus and pituitary a negative feedback manner to stop (FSH) and (H) secretion.

Timil lied Exceptions der you wix



4 hormoves (see as 2) not come 3 phases c3 & Ly FSH, LH, Estrogen and progesterone.

Who will be as a security of the company of the company

Follicular phase

*Follicle: Anatomical Structure inside ovary منون عنون عنون المعالمة المعا

- Secretion of FSH is increasing and several follicles begins to develop within the ovary.
- Only one dominant follicle continues to develop and produces significant amount of estrogens.
- ▶ Elevated estradiol levels cause a surge of both LH and FSH.
- This LH surge is responsible for maturation of the follicle, ovulation, and the formation of the corpus luteum.

* بنولد بعدد قدد من المالك الذي الميتون من البوجات لك كو مرى الملع عم المديق عند لحي مريد الملع عم المديق عند لحي مريد المي وحلة عربة في عند المي موجودة موجودة موجودة الموجودة الموجو

AN Follicle sidely # الخلوى مع الخلام واليم من الله عرف الإرج من واليموم وال antral follicle growing follicle antrum primordial follicle الحقول ومالبولي granulosa one line of dells oocyte zona pellucida ا المترى عن البويضة و نوعين لمريدين من الخلاط

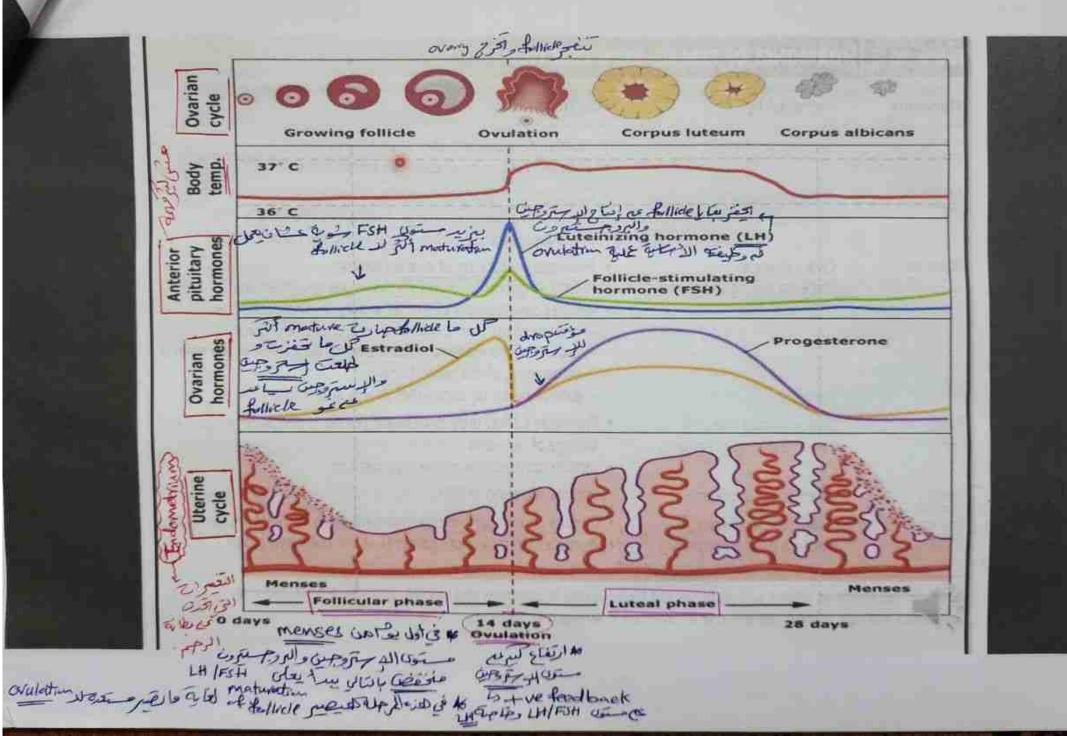
LH/FSH Life in maturation me o follicle são / Follicular phase cita LH/FSH Life que o loino ¿ são cita de lo de de de de de de de FSH & FSH &

Ovulation

- ▶ The mature follicle will rupture and release the oocyte.
- ▶ This occurs hours after the estradiol and LH peaks.
- ▶ The oocyte travels to fallopian tube.
- where it can be fertilized and transported to the uterus for embryonic implantation.

Luteal phase

- After releasing the oocyte, the leutinized follicle becomes the corpus luteum.
- It synthesizes androgen, estrogen, and progesterone.
- Progesterone: maintains the endometrial lining.
- Inhibits GnRH and gonadotropin release.
- If pregnancy occurs, human chorionic gonadotropin (hCG) prevents regression of the corpus luteum.
- If fertilization or implantation does not occur, the corpus luteum degenerates, and progesterone production declines.



The task to the same Aller some of the cycle is on postale coti menstruel cycle gluce 6 0 Je aleul su bleeding tule store Jest zieté gil à leu shielding des pri cie a bleeding) جلال العرة إلى فاست و تنفر الأولاك العولة الموجود والخرج المعاط 0 الحجے اليو الناول/ بلك لها ته الرجم نسرة من بعدين سطع ليرا LE MID is is your breeding CoTSVPTES * العمرات في العرمونا ح قرالساية الوحموجي والبرج سيرون ملون عليل ، سياد البسروين يزر ، ليف هو دي ما الله ما الم برجع بينيعا ٧٥ (هذه حساؤى الإلاتوجين و جاجيج using as drugs) Espet bust a set growth factor الإلتحوجي يعيتر في أجرامنا problem termes apothelial cells إنها بمورسمار بإبنالي بطانة الرحم هترجع تلبر وبالبرية بتأثير الد رستروجينا) Folloquiar phase = Estrogen dominant - yes I was posted epithelian layer sino of the the cies menstrand you is west of it is vascularization الرجم لد رستال الحسين لوحل حول. بسائير الرسروين سم طامة ادعم سن Orulation gue per lever Tel fortilization men we see on gin

* not fertilization * =>Ovulation Ly Release of Overry Corpus Luteum I do coul is all for follicle and LH who , release of overry come LH ما عدمة بعال عامالات الحور إلى الجسم اللاصفر له بعض المروق مي المروق مي وا Ly Wi Tet ing co 1 (15) * Luteal Phase = Progesterone dominant على عن عن عالى المراج المراج عن والبرج بيرون عالى المراج عن والبرج بيرون عالى المراج عن المرج بيرون عالى المرج المراج المراج المرج ع النعرال الى اقد عد الطامة المع عند زياره الرام والمن في قاعد عاله الرح عام مناش الو مرموعي ا إذا وا المعنى الإرتروجين لحاله بدوة تاليم البرج عرد Ju este alla alla de alla electrices inhibition de de les is com Fort prosideration 20% de la Company w * الو رستروم بيزود عدد الحلاما (vascularizationg of sole competitions) nutrient endometrium woodometrium 057 or secretary endometrium. Majore cre glucogone, glucose istiluiso otis معندة الحنس الوجار ال

THE STATE OF THE S الإرتروجين والبرج عيون عالم ف I LH FSH WH - Corpus Luteum as cing if (VLH apip) (Tope cias) regression of corpus luteum jude o QUILH ais Corpus luteum obje cs seils LH & DE back inhibition our of the soil is come to corpus luterim Zoop SWI مصدلدنة ج الإسروطين والبروج سيرون reversor - reversor - reversor a plaise sie ste de la sur cycle die bleeding relaxation on politice as sit al apple of the confirmation of the مرد لعنا الجنيات bleeding year of the sloughing were is to bleeding year of regile of menses of

* Fertilization * delle aie al fertilization plant of 2 male Corpus Luteum vi jul cosel ju un Placenta أن يض موجود لفرة طويلة مالنالي هافل سيح المرقب وروج سودن و مدن Cost Por topor die just le o placenta

Table 20-3 HORMONES OF FEMALE REPRODUCTION

Hormone	Secreted by	Functions
FSH.	Anterior pituitary	Initiates development of ovarian follicles Stimulates secretion of estrogen by follicle cells
些	Anterior pituitary	Causes ovulation Converts the ruptured ovarian follicle into the corpus luteum Stimulates secretion of progesterone by the corpus luteum
Estrogen*	Ovary (follicle) Placenta during pregnancy	 Promotes maturation of ovarian follicles Promotes growth of blood vessels in the endometrium Initiates development of the secondary sex characteristics: growth of the uterus and other reproductive organs growth of the mammary ducts and fat deposition in the breasts broadening of the pelvic bone subcutaneous fat deposition in hips and thighs
Progesterone	Ovary (corpus luteum) Placenta during pregnancy	Promotes further growth of blood vessels in the endometrium and storage of nutrients Inhibits contractions of the myometrium
Inhibin	Ovary (corpus luteum)	Inhibits secretion of FSH
Relaxin	Ovary (corpus luteum) Placenta during pregnancy	Inhibits contractions of the myometrium to facilitate implantation Promotes stretching of ligaments of the pubic symphysis

^{*}Estrogen has effects on organs such as bones and blood vessels in both men and women. Estrogen is produced in fat time in the breasts and hips. In men, testosterone is converted to estrogen in the brain.

General approaches to contraception

- Inhibiting viable sperm from coming into contact with a mature ovum (i.e., methods that act as barriers).
- Prevent ovulation.
- Preventing a fertilized ovum from implanting successfully in the endometrium (i.e., mechanisms that create an unfavorable uterine environment)

Commonly used methods

most common

Oral, transdermal, vaginal hormonal contraceptives.

Injectable and implantable hormonal contraceptives.

المولي المولي المولي Intrauterine devices. (منازے المولی Intrauterine devices. (منازے المولی المولی



Goals of contraception

- Prevention of pregnancy.
- ▶ Other uses:
- ▶ Menstrual cycle regulation,
- Reduction of premenstrual symptoms
- ▶ Treatment of acne => الشابر السابر المسابر عبد السابر ا
- الذكي يزدر قبل menses صيرة النكي يزدر قبل Prevention of (TD). perioral منطقة وخاصة

Sexual transmitted diseases Contraception/Plevis *

Tribited is acre dist

acreleisens is acre dist

Physical barrieres

hormonal Contraceptive

bei physical Jantipation

physical Jantipation

ypsychological manifestation 5 Nervousness

4 Depression

* رغيه الريض في اختيار طريقة معنيه من العلاج در رقع نا حريما بعيان الديستيار

Choice of a contraceptive method

العدى من إلا سِتَدَافِ / هول فقط maracpotion إ أو لمِتَدَافِا ؟ العَدى عن إلا سِتَدَافِ / هول فقط المستعدد ومناها ؟ العدى من الدرسان الم

The goals of use? Lew or visite of store contraceptive Lew Contrac

CONTRAINDICATIONS !!! • !!! एका प्राप्त विकास के किया है किया

4) hormonal Contraceptives

أتواعفا لختاعة لعا Pietis CI

Lynon-hormonal contract Titis CI WIN

ما رجو بحمق ب ما ما

is cation contracepalis fortility with the forther Contraceptives cités ne

فعالم المعالق المن المعالم ا menstrual cycle Just Story

fertilly is the

* منسية العجاج لا يعمل من المه ما يعير على عن به العظل عالم العيدة ومن المجار على المجار على المجار على المجار المحاد المجاد ال

Quillage of activity into						
Table 48-1						
Unintended Pregnancy Rates						
م المراحه بالطريقة	Percentage of Women Experiencing Unintended Pregnancy Within First Year of Use		Percentage of Women Continuing Use at			
Method Oliver	Use ^a	Perfect Useb	1 Year			
No method Spermicides Withdrawal Fertility awareness— based methods	85 28 22 24	المرادة الطريقة المالية	47			
Standard days method Two-day method Ovulation method	ottoe sevilo	and a series by	modmon (
Symptothermal method		24 months				
Sponge Parous women	24	20	etition .			
Nulliparous women Diaphragm	12 12	9	57			
Semale Estrogen + progestin		5	41 43 67			
Ortho Evra patch NuvaRing	9	0.3	67 67			
Depo Provera injection	Ğ	02	56			
SparaGard (copper T) SMirena (LNG IUS)		0.05	78 80 84			

(21) 5, 12

Hormonal contraception (oral)

- ▶ Components
- Or Combined oral contraceptives: estrogen+ progestin.
- 2)- Progestin only contraceptives.

The estrogen component

- Inhibits FSH release thus ? not maturation of folkele ~ not ovulation

* Subtype of estroye (EE): pharmacologically active .-- most common

<u>Mestranol</u>: prodrug, must be activated in the liver to ethinyl estradiol.

3 Estradiol valerate, which is metabolized to estradiol and valeric acid.

Dose in combined HC: 10-50 mcg of EE

(المركب تفراعاً 35 صلاء عزام)

The progestin component

- & Multiple effects
- Effects:
- ☐ Suppresses LH release. ~ Ovulation (3 com LA) of
- Tay Thickening cervical mucus to prevent sperm penetration,

[3] Slowing tubal motility fortilization [] & deg / con the post (

Delaying sperm transport, muscle duping motility as oft dupin relaxant effect of tallopian tube

Inducing endometrial atrophy ■

thickeness corrical soli chip co a motility of sperm as 25

(endometrial atrophy) - ais policie des / come tella le policie de policie de

progrestin classifications zed my to it androgenic activity of progestins 1st generation and agenic activity or antionologenic activity 15 Norethindrone Androgenic activity is desogestrel a acetate but most commonly use is norgestimate 19 Levonorgestrel Norgestre The progestin component Different progestins are found in the various oral contraceptives: receptor, april lupin progestinic activity applies Norethindrone, L Norethindrone acetate, antiestrogenic activity of estagenic activity repair Ethynodiol diacetate, L Norgestrel I-H Monday antiestragenic of estragenic activity - metabolites we size عمالاً تواع الخلصة من البروج مين على يكون لعا المواقعا على المون لعا المواقع المع المون المواقع المون المو Dienogest (new) Besogestrei.L antiestagenic activity antiandrogenic , antegenic Norgestimate, L جاية عنادت الله بين Gestodene, L progestion + testostavene Drospirenone (derived from spironolactone) None

Chloramdinone acetate

Dact en aldesterne autografit 9 act on aldosterine antigenet employen + bit projection will 4 A.5/ Anthurchisgenic androgenic) Abudolog mobile enount sex -us sind plume fines us sal fieces 1 /2 en is sile البروجسين بتزور تصنع برويتن معينا فيالدا التستوري هرتط فيه الربالي I testisteran free my antiandrogenic effecting A.E *الروم سالحلقة هنود لصنيعه برجال فعلفه

Differences among different progestins

- Progestins vary in their progestational activity and differ with respect to inherent estrogenic, antiestrogenic, and androgenic effects.
- Estrogenic and antiestrogenic properties are secondary to the extent of progestins' metabolism to estrogenic substances,
- Androgenic activity results from the structural similarity of the progestin to testosterone (receptor binding and activity) and the ability to affect free testosterone concentrations through impact on sex hormone-binding globulin, a major carrier protein for testosterone

 A.E. of androgenic activity

(1) Acre (2) Oily okin (3) weight gain

9 myperglycomia

CHC preparations

manstrual Jable (one phase oft) awill wie politip 28 of 21 / monophasic preparation to dose (dose wie) type mis) awill with the Monophasic:

- Type and dosage of ingredients contained in each active pill is the same (progestin والمناوة estrogendominat الطبيعة والمنافقة المنافقة ال
- estrogen co gip quiel est sold &
- Preferred in Women with side effects related to progestin العديم علو deficiency (late cycle spotting)
- Conditions necessitating progestin dominance (benign breast disease)

Some Available Contraceptives Estrogen (mcg/ tablet) Progestin (mg/tablet) Monophasic Preparations ⇒ 10 -50 mcg Norethindrone acetate (1) EE (20)mcg Levonorgestrel (0.09) EE (20) Levonorgestrel (0.1) EE (20) Drospirenone (3) EE (20) Desogestrel (0.15) Norethindrone (0.8) Desogestrel (0.15) EE (30) Levonorgestrel (0.15) EE (30) Drospirenone (3) EE (30) Norgestrel (0.3) EE (30) Norethindrone acetate (1.5) EE (30) Norgestimate (0.25) EE (35) Norethindrone (0.4) EE (35) Norethindrone (0.5) EE (35) Norethindrone (1) EE (35) Ethynodiol diacetate (1)

Norgestrel (0.5)

Norethindrone (1)

Ethynodiol diacetate (1)

EE (35)

EE (50)

EE (50)

Mestranol (50)

CHC preparations

Multiphasic => mintic of normal manstraul Cycle ~ 501 Get pow Colon of LA.E

Less progestin overall, good for women suffering progestin A/Es (wt gain, acne, increase appetite)

- treatment cycle

 estrogen, من من الله على على المناس على المناس على المناس الم
- contain three different doses of estrogen and/or progestin throughout the cycle Time strength as zivic r Lity of armes &
- 3- Quadriphasic:

contain 4 different doses of estrogen and/or progestinethroughout

Biphasic Preparation	ons			
EE (10) EE (20,0,10) EE (35)	Norethindrone acetate (1,0) Desogestrel (0.15) Norethindrone (0.5/1)			
Triphasic Preparati	ions			
EE (20,30,35) EE (30,40,30) EE (35) EE (35) EE (35)	Northindrone acetate (1) Levonorgestrel (0.05,0.075,0.125) Norgestimate (0.18/0.215/0.25) Norethindrone (0.5,1,0.5) Norethindrone (0.5,0.75,1)			
EE (25)	Norgestimate (0.18,0.215,0.25)			
EE (25)	Desogestrel (0.1,0.125,0.15)			
Quadriphasic Prep	arations			
Estradiol valerate (3,2,2,1)	Dienogest (0,2,3,0)			
Extended Cycle Preparations				
EE (20) EE (20) EE (30) EE (20,25,30,10) EE (20,10) EE (30,10)	Levonorgestrel (0.09) Levonorgestrel (0.1) Levonorgestrel (0.15) Levonorgestrel (0.15,0) Levonorgestrel (0.1) Levonorgestrel (0.15)			
Progestin-Only Preparations				
None	Norethindrone (0.35)			

COC regimens

most Common

- Hormone-free week (21/7 regimen): 21 days of active pills

 Por property followed by 7 days of no pill. This allows users to have a

 Lower withdrawal bleed. Lowestagen, Lowestan
 - This regimen was developed to mimic naturally occurring menstrual cycles.

* هذه الضريقة عير مهنوبة عند بعض السيالة لأله عدد أيام و menses مرابع و 4- 4 أيام و كوران و المحاط زياده و كوران و كالمحاط زياده و كوران و كالمحاط زياده و كوران و كالمحاط زياده و كالمحاط بوت في اللام ، حداع

4p 21 Un ap 28 des Eliganices della es 21/7 regimen by 7 days ~ placebo

COC regimens

- ▶ 24/4 regimen:
- active pills are given for 24 days followed by 4 days of placebo.
- May have increased contraceptive efficacy??.
- ▶ decreased bleeding; ~> 2 days menses , I risk of anemia
- maintenance of the 28-day cycle that provides marker for lack of pregnancy; and safety and tolerability similar to 21day regimens

COC regimens

- Continuous cycle
- monophasic pill is taken for 84 days followed by a 7 day hormone-free interval. ... * menses **
- A regimen that allows users to avoid having a menstrual period.
- Improved compliance, the maintenance of routine activities and decreased expense for feminine hygiene products.
- The progestin effect achieved by the continuous exposure results in a thin, atrophic endometrium and less menorrhagia.

 The progestin effect achieved by the continuous exposure results in a thin, atrophic endometrium and less menorrhagia.

 The progestin effect achieved by the continuous exposure results in a thin, atrophic endometrium and less menorrhagia.

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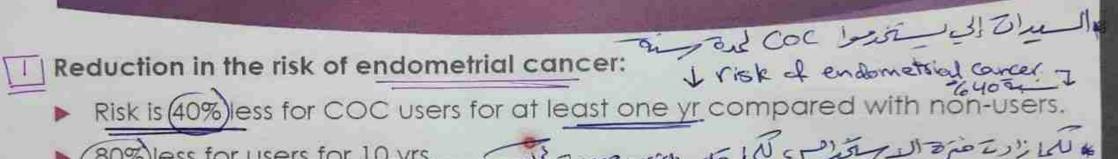
Starting COCs

Different options:

- Quick start or same-day start.

* بدائت المحمدامة في اليواال الع أوالنامه أورالاسة Plot ore le coulatinges 45 1,40 الأدوع لحالها تمنع الحلى ، لذلك يجب المراث ورسية أخرى لمنة الحل لحدد 7 أيام عي الفاقل Backup Gntraceptive? + रहा वर का किया कर

ovulation by less the or the or stiplion / practice &3 46 بفضلوا سيتغدسوا موانع على اجتياطية menstrual is cial of Jeil 1821/20 لزياده جمان منع الحل و بعد شعر pills



- ► (80%) less for users for 10 yrs. Jest apre 815k de les color less for users for 10 yrs. endometrium reprogestm sitingia quiellous t

2 Reduction in the risk of ovarian cancer:

- women who have used oral contraceptives for 4 years or less are (30%) less likely to develop ovarian cancer.
- ► Risk is 60% less for 5-11 yrs users.
- Risk is (80%) less for > 12 yrs users.

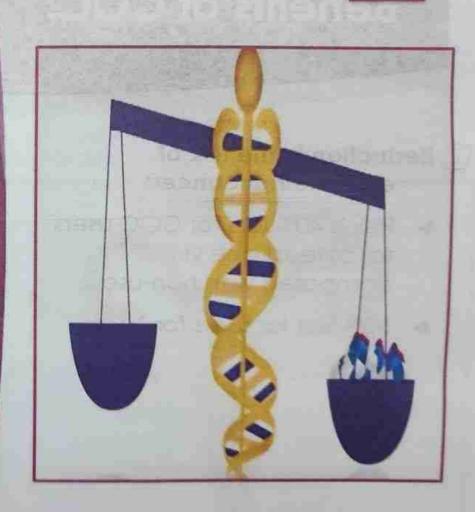
4 brisk of ovarian cysts تفايطا له ليا

Stimulations ple is a la il jel o a (= of ovary

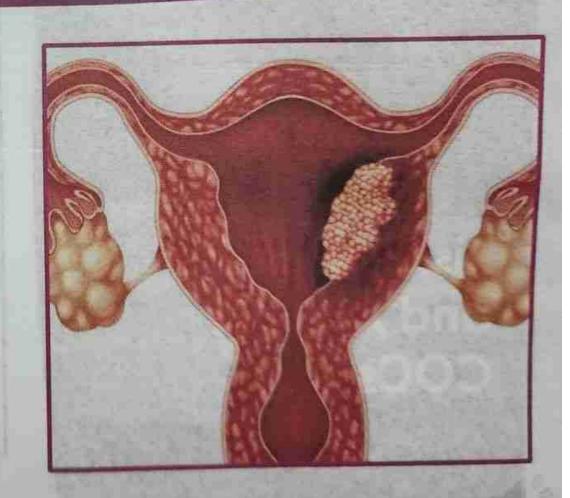
& Stimulation of overy by FSH, LH & inhibition of FSH, LH JEW COC Bost

(22) siple

Risks/benefits and ADRs of COCs

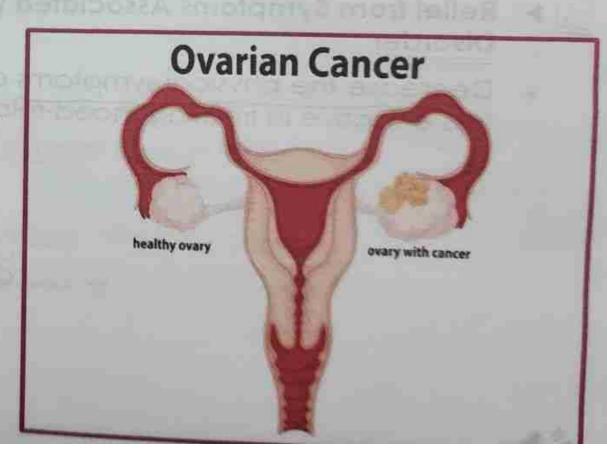


- Reduction in the risk of endometrial cancer:
 - Risk is 40% less for COC users for at least one yr compared with non-users.
 - ▶ 80% less for users for 10 yrs.



Reduction in the risk of ovarian cancer:

- women who have used oral contraceptives for 4 years or less are 30% less likely to develop ovarian cancer.
- Risk is 60% less for 5-11 yrs users.
- Risk is 80% less for >12 yrs users.



* في عندالسيدات أو الفييّات ، في نفيات menstram cycle وَلفيّان ، كانتما من المدين المدينة الم

Relief from Symptoms Associated with Premenstrual Dysphoric Disorder

Decrease the physical symptoms associated with the disorder but less effective in treating mood-related symptoms

G Abdonated Pain—Veipa Talis GP/E | Elipto (Comp Gheadacham () physical symptoms (Constipation (2) psychological symptoms (3) depression premenstrual syndramics cation & apply i ip) & 1 at psychological symptoms

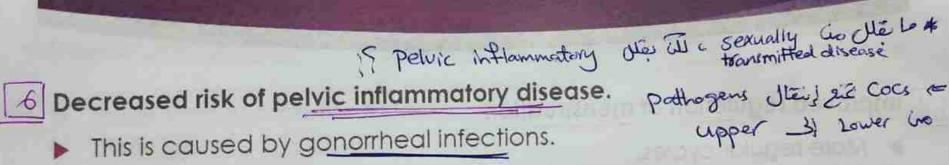
Apply i ip) & 1 at psychological symptoms

Apply i psychological symptoms

SSRI alongs open [ille

- | Improved regulation of menstruation:
 - More regular cycles.
 - Less cramping and dysmenorrhea. progestin effects
 - Less blood loss as a result of less days of menstruation.
- 5 Decreased risk of benign breast disease:
 - Less risk of fibroadenomas -> Common "

risk of concer



Thickening of the cervical mucus may be the reason.

Polivic inflammatory disease/inflammation in upper parts of the genitournary tract (uterus, fallopian tube, overy)

7 Prevention of ovarian cysts:

B/c they suppress ovarian stimulation.

& Cocs act , -ve feed back of FSH, LH my & stimulation of ovarian

8 Improvements in acne control:

- Lower free testosterone concentrations by increasing sex-hormone binding globulin.
- Lower overall testosterone concentrations.
- Use progestins with lower androgen activity:
- Norgestimate.
- Desogestrel.
- 3Drospirenone.

sexually transmitted disease

1- Risks of STD: due to decrease use of barriers.

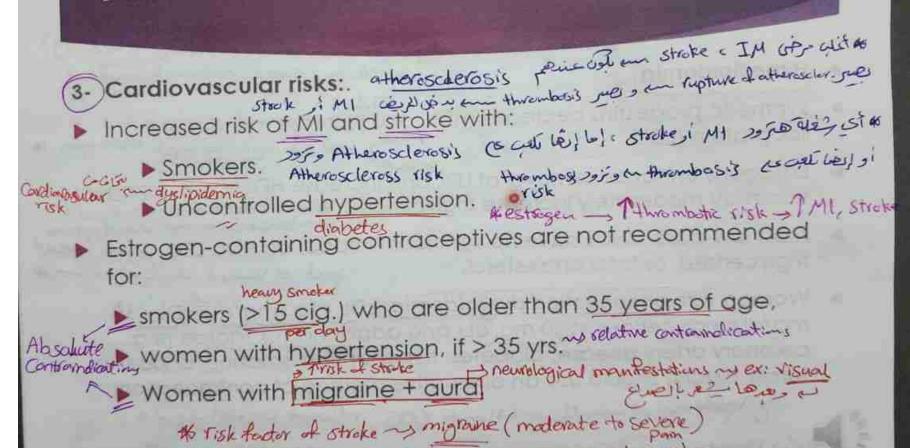
2- Hypertension risk :

Hypertension secondary to OCs occurs in 1-3% of patients.

adosterone-like effect my Noit retention

Cyclical weight gam and in in it of the action of the city o

migraine without aura



5 symptoms/ nausea and vorniting

4) triggers / chity of the dil to we of the

motion sickness a you copy I along

=) Absolute Contraindications and Relative ~ disease mus citis less perception cos TRA en smoke inchiple/ 516 Ly relative contraindications We di tie a relative contraveli. ouis pe Sand TOA ip! ils AgT un visi que عما المولى سرة عندها من الل معينة بنخلى عندها Grelative Contracionations of Contraception (To m contraceptive methods cie) (coc, in the Time on it => why to go for it?

Hyperlipidemia

*Old generation of progestin (that have androgenk altivity)

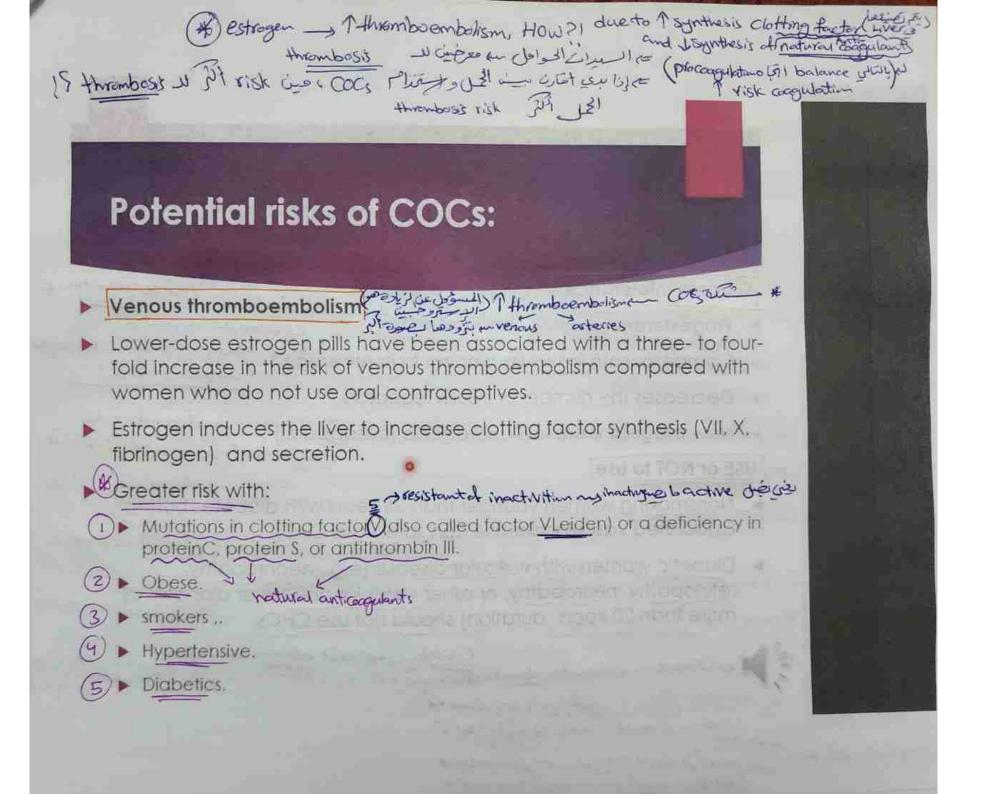
THOL I lipid (5 the 2 the 2)

- ▶ Synthetic progestins decrease (HDL) and increase low-density

 | Ipoprotein (LDL). אונים איני ביים לאוני וויסטו שלא ביים לאוני וויסטו שלא ביים לאוני וויסטו וויסטו שלא פיאריים וויסטו וויסטו
- Estrogens enhance removal of LDL and increase HDL levels. Estrogens also may moderately increase triglycerides. # net effect of commonly use combined harmones controlled harmones controlled
- Most low-dose CHCs have no significant impact on HDL, LDL, ق المعرفة على المناه المناه
- Women with uncontrolled dyslipidemia (LDL > 160 mg/dL, HDL < 35 mg/dL, triglycerides > 250 mg/dL) and additional risk factors (e.g., coronary artery disease, diabetes, hypertension, smoking, or positive family history) should use an alternative method of contraception.

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Glucose intolerance:

Fied Moulin Certy progestin Brs & affinity of insulin on its receptor

antelled anot complication

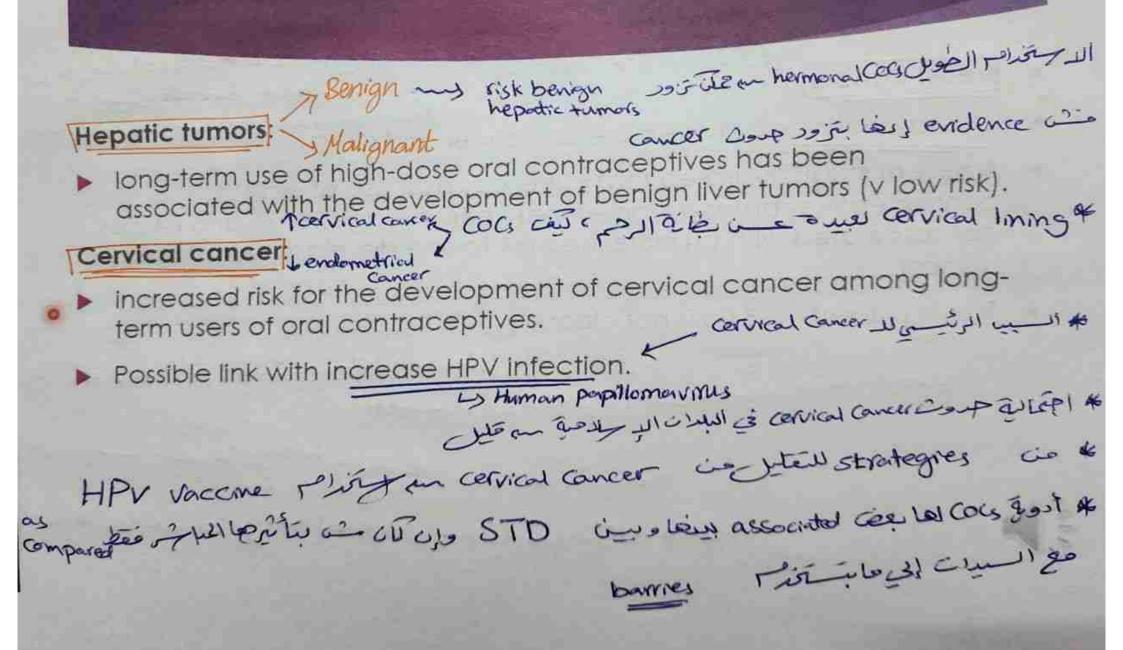
- Competes with insulin for binding to its receptors
- Decreases the number of insulin receptors.
- b effects of insulm FEDI GO DE GOLD GO GOLD POR CONTROL FOR New progestins are less androgenic (desogestrel)

WSE or NOT to use

Nonsmoking women younger than 35 years with diabetes but no associated vascular disease can safely use CHCs.

Diabetic women with valcular disease (e.g., nephropathy, retinopathy, neuropathy, or other vascular disease or diabetes of more than 20 years' duration) should not use CHCs.

CIVISTO GIST ON estrage a city & => Diabetic my absolute contrandications diabetic ptn. just such urshallien +K contailed readisease sis already 25th mantrolled a diabeteus go up sie vers of (WHO) me in in the



سے حازالت الاعدی الدر المرائے تدفی وجود علاقہ کسرہ سے نامر الدام وصود کا محدی دورہ کا محدی معان کے دورہ کا وجود کا محدودہ کا وجی دورہ کے دورہ

- Little association between breast cancer and COC...
- A recent study illustrated that current or past use of oral contraceptives among women between the ages of 35 and 64 was not associated with an increased risk for the development of breast cancer.
- Risk in patients <35 yrs is not clear.</p>

Breast cancer

Contraindreated un COCs / supplied | breast concer is period of period of period of period of period of breast concer of breast concer cocs period by the personal history Lance is to be a personal history Lance is to be a

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Potential risks of COCs

(bile acid , bile salts نعن على Bile لعيف نه المحال المح

- Decrease bile flow (<u>cholic acid</u> is increased while chenodeoxycholic acid is decreased)
- In women with preexisting gallstones, low-dose estrogencontaining oral contraceptives may enhance the potential for the development of symptomatic gallbladder disease

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chandroxycholic acid who was in wire chalic acid sit cher it cas is in the flow still the obstruction of contraction disease me we will the most of the flow still

, CORS IFTLE Gallbadder Gillebeis & wilk

Potential risks of COCs

Migraine headaches:

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CI a peopertin *

- Women with migraine headaches (with and without aura) may
- threefold. . Cocs plint being till cocs plint asi morane pour postolul +
- Recommendations:
- Women of any age who have migraine with aura should not use CHC.
- Women who develop migraines (with or without aura) while receiving CHC should discontinue use immediately.
- Progestin-only pills may be a good alternative.

على تستار بعد ؟ أساسع عن الولادة إذا السيدة هيم عرف رضافة طبيعة .

Contraindications to the Use of Combined Oral Contraceptives (COCs)

Absolute Contraindications

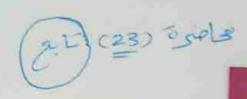
- -History of thromboembolic disease
- -History of stroke (or current cerebrovascular disease)
- History of (or current) coronary artery disease, ischemic heart disease, or peripheral vascular disease
- -History of carcinoma of the breast (known or suspected)
- History of any estrogen-dependent neoplasm (known or suspected)
- -Undiagnosed abnormal uterine or vaginal bleeding Pregnancy (known or suspected)
- Heavy smoking (defined as 15 cigarettes or more per day) by women who are 35 years of age or older
- History of hepatic tumors (benign or malignant) Active liver disease
- Migraine headaches with focal neurologic symptoms

 -Postpartum (during the first 21 days, as well as during days
 21 through 42 in women with additional risk factors for
 thromboembolism, including age ≥ 35 years, history of previous
 venous thromboembolism, preeclampsia, recent cesarean
 delivery obesity and smoking)

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Relative Contraindications

- -Smoking (< 15 cigarettes per day) at any age
- Migraine headache disorder without focal neurologic symptoms
- Hypertension (NOTE: WHO considers health risk posed by COC use to be "unacceptable" when either systolic blood pressure 160 mm Hg or more, or diastolic blood pressure 90 mm Hg or more)
- Fibroid tumors of the uterus
- Breast-feeding
- Diabetes mellitus
- Family history of dyslipidemia
- Sickle cell disease
- Active gallbladder disease
- Age > 50 years
- Elective major surgery requiring immobilization (planned in the next 4 weeks)



COC ADRS

Serious /stop

Tolerated by patient / continue

Self limiting / wait and see

Not tolerated / modify or stop

ADRS

Serious ADRs



Severe Leg Pain Thromboembolic

Process.



ASS COUNTRIUSING Education Consultante, Inc.

Less serious

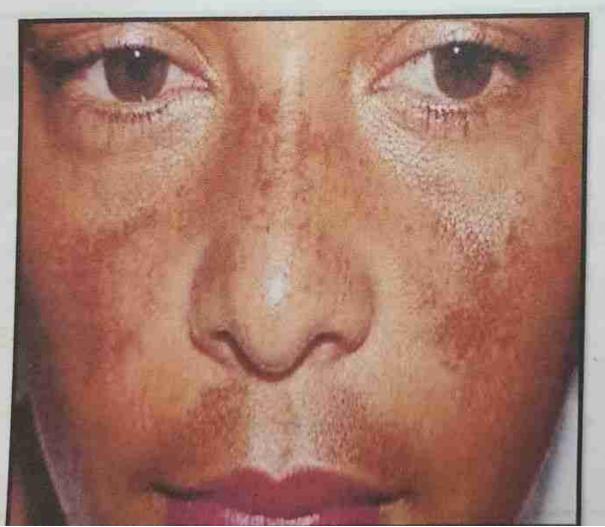
Estrogen related

Progestin related

ADRs: Estrogen excess

ADR Management N&V self limiting Like Symptoms may resolve within 3 months عَلَىٰ تَكُونَ صَيْحِةِ ، لَلْهِ وَوَا لِمُسْتَدُلُمُ اللهِ عَلَيْهِ مَا اللهِ عَلَيْهُ مِنْ اللهِ مَا اللهُ م عاام حاد والله والله ما الله والله ما الله ما Take at bed time with food. Decrease estrogen content or progestin only pills if not resolved Symptoms may resolve within 3 months Breast Decrease estrogen content pills or progestin only if not tenderness / mastalgia self-limiting resolved Dysmenorrhea/ Symptoms may resolve within 3 months Decrease estrogen content pills or progestin only or menorrhagia bleeding as de extended cycles if not resolved NSAIDs for dysmenorrhea

Estrogen excess: Melasma /chloasma



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موت و من الد تاون التي تطور عن monopuse woman (الأنعم علما فاتنائه و varies activity الإستوان) و (تعالى الإستوان) و ويتظهر العراق وفينة عند ألب و العينات وه العراق الوستووي الحراج العراق الحراج العراق الع

ADRs: Estrogen deficiency

Estrogen deficiency

hot flushes

Vasomotor symptoms, nervousness, decreased libido

@Early-cycle (days 1-9) breakthrough bleeding and spotting

@Absence of withdrawal bleeding

(amenorrhea) (Simon: 2117 रूपर हिंदी क्लोंक स्था mensis Jupis 18th edgills « انع عن نعمالد عروجين أو

زيادة البروع بين أو صارعا ع.

الله الله مريطا دوية الماله

Increase estrogen content in CHC

Increase estrogen content in CHC if menses is desired

Continue current CHC if amenorrhea acceptable

* لحد وشعور إما زود الإسرودين ار نظل الروم يين

ADRs: progestin related

Progestin excess

Increased appetite, weight gain, bloating, constipation
Acne, oily skin, hirsutism

Depression, fatigue, irritability
Progestin deficiency

Dysmenorrhea, menorrhagia

Late-cycle (days 10-21) breakthrough bleeding and spotting Decrease progestin content in CHC

Decrease progestin content in CHC Choose less androgenic progestin in CHC Decrease progestin content in CHC

Increase progestin content in CHC
Consider extended-cycle or continuous
regimen OC
Consider progestin-only methods or IUD
NSAIDs for dysmenorrhea
Increase progestin content in CHC

Spotting/ breakthrough bleeding

- ▶ May resolve within 3 months!
- Time is important:
- ▶ Early cycle: estrogen deficiency ???/progestin excess
- Mid cycle estrogen/progestin deficiency?
- ▶ Late cycle: progestin deficiency?

Headache

- During contraceptive use VS placebo week
- Mild VS moderate-severe.
- ▶ Migraine!

(OCs نعونه

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- ▶ Magnitude of effect?
- ► Cyclic VS noncyclic? > cyclic estrogen

Mark Street and the Street



Role of drospirenone? when it strains with a second section with a second section with a second section with a second section with the second section with the second section sectio

Drug-drug interactions

- Antibiotics.
- Rifampin, ampicillin, penicillin G?, tetracycline?, and minocycline
- Significance? Backup contraception? (fampin is [lan, coc 1 is in a legal 1 is 1 * Coc. Que inducers:
- Enzyme inducers:

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Commonly Seen Drug Interactions with CHCs4,34

Medication	Mechanism	Clinical Effect
Anticonvulsants (carbamazepine, oxcarbazepine, phenytoin, phenobarbital, primidone, topiramate, and felbamate)	Increase metabolism of CHCs via induction of various cytochrome P-450 enzymes	Decrease efficacy of CHCs (EE doses < 35 mcg are not recommended in women on these medications)
Bosentan	Increase metabolism of CHCs via induction of cytochrome P-450 3A4 enzyme	Decrease efficacy of CHCs
Griseofulvin	Increase metabolism of CHCs	Decrease efficacy of CHCs; backup method of
Lamotrigine () () () () () () () () () (CHCs increase metabolism of lamotrigine via induction of glucuronidation	Contraception is recommended Decrease efficacy of lamotrigine; dose adjustment may be necessary
Nonnucleoside reverse transcriptase inhibitors (efavirenz, etravirine, nevirapine, rilpivirine)	Increase metabolism of CHCs	Decrease efficacy of CHCs; alternative method of contraception may be considered with efavirenz
Protease inhibitors (atazanavir, darunavir, fosamprenavir, indinavir, nelfinavir, ritonavir, saquinavir, tipranavir)	Increase or decrease in metabolism of CHCs	Decrease efficacy of CHCs or increase side effects of CHCs; alternative method of contraception is recommended with fosamprenavir and may be considered with ritonavir-boosted protease inhibitors, atazanavir and nelfinavir
Rifampin, rifabutin	Increase metabolism of CHCs	Decrease efficacy of CHCs; backup method of contraception is recommended
St. John's wort	Increase metabolism of CHCs via induction of various cytochrome P-450 enzymes	Decrease efficacy of CHCs; avoid use with CHCs
Theophylline	CHCs decrease theophylline clearance by 34% and increase half-life by 33%	Increase side effects of theophylline

Special considerations

Starting OC in the post partum phase:

- Fears: thrombosis /breast feeding
- The WHO recommends that, in the first 21 days postpartum (when the risk of thrombosis is higher), estrogen-containing hormonal contraceptives should be avoided (can use progestin only).
- ► The WHO recommends that women who are breast-feeding avoid CHC in the first 6 weeks postpartum b/c of concerns about hormonal exposure in the newborn and diminished quality and quantity of breast milk due to early exposure to CHCs.



General considerations/ choice of COC

- In women without coexisting medical conditions, an OC containing 35 mcg or less of EE and less than 0.5 mg of norethindrone is recommended.
- Adolescents, underweight women (< 50 kg), women older
 han 35 years,, and those who are perimenopausal may have fewer side effects with OCs containing 20 to 25 mcg of EE

General considerations

- Women weighing more than (72.7 kg) may have higher contraceptive failure rates with low-dose OCs and may benefit from pills containing 35–50 mcg of EE.
- Women with oily skin, acne, and hirsutism should be
- given low androgenic OCs

(24) ō ipl3

Missed doses?

No. of missed tablets/ week	action
One tablet any week	Take 2 tablets on the day she remembers
2 tablets weeks 1,2	2 tablets the day she remembers 2 tablets the next day 7 day backup method (non-hormore)
2 tablets week 3 or 3 pills any time	Start new package with 7 days backup methof

Progestin- only pills: pros and cons

- Main active ingredients used in such pills are norethindrone and norgestrel.
- May be less effective than COC?. →
- مش درادسان فعلية خاربت سفيم الخوف فن عثم الدائر الم عوف ألى ربعني لو أنه ت الجرعة في اعلى لدزم أمد سفي المنافقة
- Advantages: backup method Pist+
- ter 48 hrs Breast feeding
- Less risk of thromboembolic events.
- Lack of A/E related to estrogen component.
- No pill free period, minimize menses.

Progestin- only pills: pros and cons

- Starting pills:
- Day one of MC
- Quick start with backup method for 2 days.
- Missed doses:
- If the woman is 3 hours late in taking her progestin-only tablet, then additional nonhormonal contraception should be used for 48 hours

Trensdermal patches

▶ Intervention ► Intervention ► Intervention ► Intervention ■ Int

2117 regimen Miring (= 3 weeks - 3 patches

ع الدر قدام معلى المعلى المعل



(24) 8,4013

Transdermal patches

► Considerations for use:

Not for woman > 00 has a sale woman i

ortho eura

Not for women >90 kg.-

دلازع العلرى The patch should be applied to the abdomen, buttocks, upper torso, or upper arm at the beginning of the menstrual cycle.

lf the woman forgets to change her patch or restarts the active patches after the ninth day, a backup method should be used for 7 days

If the patch is detached for more than 24 hours, a new 4-week cycle should be restarted and a backup method used for 7 days

> oral contraceptivell is de sile thrombs: 1120/2014 thremoundal & m

Patches coiso y paroi i sullice of the chet

Injectable progestins

- Medroxyprogesterone acetate: DMPA.(Depo-Provera/ Depo subQingle),
 provera).
- Administered every 3 months either by deep i.m injection in the gluteal or deltoid muscle or s.c in the abdomen or thigh within 5 days of onset of menstrual bleeding.
- ▶ Inhibits ovulation for up to 14 weeks. → Lo, Si
- return of fertility may be delayed after discontinuation (10 months compared to 1-2 weeks with pills)
- Main concern: wt gain (1 kg / month), may not resolve until 6-8 months the last dose

Injectable progestins

- ► A/E:
- Menstrual irregularities;
- prolonged bleeding esp in the first year of use.
- can be reduced with a short course of estrogen (e.g., 7 days of 2 mg estradiol or 1.25-mg conjugated estrogen given orally).
- After 12 months of therapy, 55% of women report amenorrhea, with the incidence increasing to 68% after 2
 - Effection BMD? Osetoposis April in infrestration with the series of the

DMPA inhibits the secretion of gonado trappine hormons from petiulay -> + estragin production.

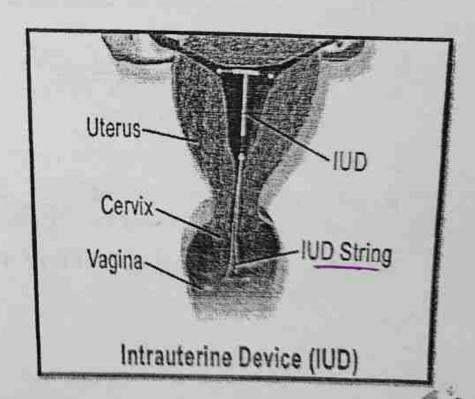
1 Bmd

very commanly used.

Intrauterine devices

- Considered one of the long-acting reversible contraception methods
- ► All I<u>UDs are T shaped:</u>
- > With Copper.
- > With levonorgestrel (Mirena®).

Hormonal, Esta 4



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Server and the server of

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Mechanism of action of IUDs

Inhibition of sperm migration, -> By decreas span nortality.

Damaging the fertilized ovum.

Preventing implantation.

Progestin effects in Mirena®

Userus No.

Nomenal IUD,

outlation and conviced mucous

Implantation the people outstime:

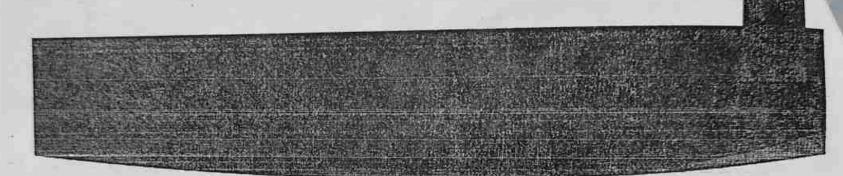


Restriction for use:

* المِمَاس بِيَوَاكِم فَيُ أَمَالَنَ مُحَكِّفَةَ وَسِيمِ مِنْ الْمُلِكَ عَلَيْهِ الْمُلْكِ عَلَيْهِ الْمُلْكِ عَلَيْهِ الْمُلِكِ عَلَيْهِ الْمُلْكِدُ) الْمُلِكِ عَلَيْهِ الْمُلْكِدُ)

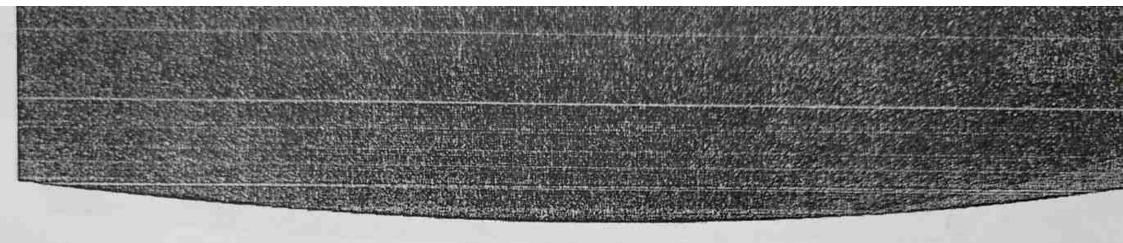
Current pelvic inflammatory disease Current STD, "sexually transmitted disease" Purulent cervicitis, ₩Undiagnosed abnormal vaginal bleeding, Malignancy of genital tract, Uterine anomalies or fibroids distorting uterine cavity, Allergy to IUD components. ► Wilson's disease inhereted disored in with excessive amount of copper accumulate in the body. Because JUDS WIN increase excresion &

(5 copper see sui 1 to copper - IUDs will to



- > ParaGard: Copper IUDs.
- has a polyethylene body that is wound with copper wire . ملخوی نامیدی
- ▶ is a highly effective IUD that can be left in place for 10 years.
- ▶ Increases menstrual blood flow and dysmenorrhea
- ▶ Mirena:
- has a polyethylene body, with a levonorgestrel reservoir in the vertical stem of the T
- Mirena releases 20 mcg of levonorgestrel daily, but release decreases to 10 mcg daily over the 5 years of use
- Can be left in place for 5 years.
- Increased spotting in the first 6 months of use; women should be counseled that the spotting will decline gradually over time.





- Menstrual flow in users of the levonorgestrel IUD is decreased, and development of amenorrhea has been observed in 20% of users in the first year and 60% in the fifth year.
- Mirena has an additional indication for treatment of heavy menstrual bleeding (menorrhagia)
- Return to fertility:
- Rapid within 30 days after removal of the IUD

Emergency contraception

- used to prevent unwanted pregnancy after unprotected or inadequately protected sexual intercourse
- ▶ Options:
- ▶ Progestin-only:
- Next step ®: 2 doses of levonorgestrel 0.75 mg given within 72 hrs of intercourse and 12 hrs apart)
- Plan B one-step®: single 1.5 dose of levonorgestrel given with 72 hrs of Intercourse.
- Progesterone receptor modulators: Vijpristall up to 5 days
- SIUD. during 5 days

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S regionen air aire) port of all (ulipristed acetate)

120 hrs of upprotected sex.