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Department of Pharmaceutics and
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كلية الصيدلة
College of Pharmacy

Final exam
Biopharmaceutics and Pharmacokinetics (1)

حركة الدواء (١)

اسم الطالب:

Sections	Marks
First section	/20
Second section	/20
Third section	/20
Total	/60

Answer the following questions please:

Section 1:

Put true or false and fill the table in the following page please:

1. Increasing the concentration and by increasing the viscosity of the medium the bioavailability of the drugs administered by the intranasal route of administration decreases.
2. By increasing the thickness of the stagnant layer formed around the solid particles decreases the dissolution rate and so decreases the bioavailability of the drugs.
3. According to Gibbs-Donnan equation the dissolution rate should be increased by increasing the specific surface area of the particles which should be achieved by particle size reduction.
4. The cholinergic drug decreases the motility and secretion and so, the gastric emptying rate which obeys first order kinetics.
5. Increasing the intestinal motility affects positively the passive transport and negatively the active transport of the drugs.
6. By increasing the amount of water in the stomach, the residence time of the drugs decreases, the acidity decreases and the gastric emptying rate decreases.
7. The liberation of the drugs from the suppository bases should be increased by increasing the solubility of the drug in the vehicle and by increasing the spreading capacity.
8. The dissolution rate for the drugs that has a high aqueous solubility is rapid and the rate limiting step is the rate at which the drug crosses the cell membrane.
9. Minimize first pass-metabolism of the drugs and so enhanced bioavailability of the drugs when the rectal route of administration is used.
10. The ideal suppository base should have high water number, stable on storage conditions and to be in a meta-stable form.
11. Decreasing the particle size of the drugs when the rectal route of administration is used increases the bioavailability of the drugs because it increases the liberation phase from the vehicle.
12. The hydrosoluble drugs incorporated in a liposoluble bases gives slow release, bad absorption and local effect.
13. The amorphous zinc insulin suspension has larger onset time of action and shorter duration of action rather than the crystalline zinc insulin suspension.

14. The intraocular availability decreases when blinking of the eye and increasing the age of the patient.
15. By increasing the concentration of the drug and the specific surface area of the drug the rate of absorption should be increased according to Michaelis-Menten equation.
16. The presence of food when the cephalosporin's are administered should reduce the rate and the extent of absorption.
17. Unionized substances that are lipid soluble are poorly absorbed and completely ionized drugs like quaternary ammonium and sulfonate derivatives are poorly absorbed.
18. After the intramuscular administration of the drugs the binding of the drugs to the muscle protein prolong the biological half- lives of the drug in the body.
19. The activated charcoal should be used because of its very specific absorptive properties.
20. The onset time of action when the drug is administered by the sublingual route of administration is the faster route after the intravascular administration route.

Q	A	Q	A
1		11	
2		12	
3		13	
4		14	
5		15	
6		16	
7		17	
8		18	
9		19	
10		20	

Section 2

Answer the following short questions?

1. Give two disadvantages of the rectal route of administration?

2. How the vaginal absorption of the drugs can be improved?

3. Give the definition of the first-pass effect and which is the route that much suffers from it?

4. What is the eutectic mixture and why it should be used?

5. What is the ocusert p-40?

6. Explain how the isotonicity affects the intramuscular absorption?

7. What are the properties of the vehicle used for the intranasal preparation posses?

8. Explain the mechanisms of the absorption enhancers?

9. How the pH and the pKa of the drugs affects the ocular permeation?

10. Explain how the tonicity affects the corneal permeability?

Section 3

1. Mention and explain in details the factors affecting the intranasal absorption?

2. Mention and explain in details the factors affecting the IM Absorption?

3. Mention and explain in details the factors that affect the deposition of the drugs in the various regions of the respiratory tract.

4. Mention the advantages and disadvantages of the ocular route of administration?

Good luck

Dr. Issam Abushammala