قائمة الاسئلة 2025-05-10 07:00

حركية الدواء- المستوى الرابع صيدلة

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1) Pharmacokinetic models are used to:
   1) - Predict plasma, tissue, and urine drug levels with any dosage regimen
   2) - Calculate the optimum dosage regimen for each patient individually
   3) - Estimate the possible accumulation of drugs and/or metabolites
   4) + All of the answers are correct
2) Pharmacokinetic models are used to:-
   1) - Correlate drug concentrations with pharmacologic or toxicologic activity
   2) - Evaluate differences in the rate or extent of availability between formulations (bioequivalence)
   3) - Explain drug interactions
   4) + All of the answers are correct
3) Relation between Cl and $t_{1/2}$:
   1) + Cl increases, t1/2 decreases
   2) - Cl decreases, t1/2 decreases
   3) - All of the answers are incorrect
   4) - All of the answers are correct
4) Relation between Cl and Vd :
   1) - Cl increases, Vd decreases
   2) - Cl decreases, Vd increases
   3) + Cl increases, Vd increases
   4) - All of the answers are correct
5) Relation between Cl and AUC :
   1) + Cl increases, AUC decreases
   2) - Cl decreases, AUC decreases
   3) - Cl increases, AUC increases
   4) - All of the answers are correct
6) Dose-dependent pharmacokinetics:
   1) + Nonlinear pharmacokinetic models
   2) - Linear pharmacokinetic models
   3) - All of the answers are correct
   4) - All of the answers are incorrect
7) Two compartment (IV) bolus injection pharmacokinetics the equation of the curve that best fits the data is:
   1) - $Cp = Cp^0 e^{-kt}$
   2) + $Cp = Ae^{-at} + Be^{-bt}$
   3) - $Cp = A(e^{-kt} - e^{-kat})$
   4) - $Cp_{ss} = R / Cl$
8) IV infusion pharmacokinetics the equation of the curve that best fits the data is:
   1) - $Cp = Cp^0 e^{-kt}$
   2) - $Cp = Ae^{-at} + Be^{-bt}$
   3) - $Cp = A(e^{-kt} - e^{-kat})$
   4) + $Cp_{ss} = R / Cl$
9) A drug was given in a single intravenous bolus of 3mg/kg to male adult (average weight 50 kg). The pharmacokinetics fits a one-compartment model Cp = 50 e-0.4t
   (assume that units of ug/ml for Cp and hr for t & Cp0 = Dose /Vd).
   What is the Vd of the drug?
   1) + Vd = 3L

2) - Vd = 2L
3) - Vd = 4L
4) - Vd = 5L

10) A drug was given in a single intravenous bolus of 3mg/kg to male adult (average weight 50 kg). The pharmacokinetics fits a one-compartment model Cp = 50 e-0.4t
(assume that units of ug/ml for Cp and hr for t & Cl = KVd).
What is the Cl of the drug?
1) - Cl = 1.4 L/hr
2) - Cl =1.6L/hr
3) + Cl = 1.2L/hr
4) - Cl = 0.8 L/hr

11) A drug was given in a single intravenous bolus of 3mg/kg to male adult (average weight 50 kg). The pharmacokinetics fits a one-compartment model Cp = 50 e-0.4t
(assume that units of ug/ml for Cp and hr for t).
What is the plasma level of the drug after 10 hours?
1) - Cp = 0.411 ug/ml
2) + Cp = 0.916 ug/ml
3) - Cp = 1.41ug/ml
4) - Cp = 4.11 ug/ml

12) After administering a single intravenous dose (5 mg/kg) in female adult (average weight 60 kg). The pharmacokinetics fits a two-compartment model:
Cp= 60 e-0.2t + 40 e-0.3t
(assume that units of ug/ml for Cp and hr for t & Cp0 = A+B)
What is the initial plasma level of the drug CP0 ?
1) - CP0 = 80 ug/ml
2) - CP0= 60 ug/ml
3) - CP0 = 40 ug/ml
4) + CP0= 100 ug/ml

13) After administering a single intravenous dose (5 mg/kg) in female adult (average weight 60 kg). The pharmacokinetics fits a two-compartment model:
Cp= 60 e-0.2t + 40 e-0.3t
(assume that units of ug/ml for Cp and hr for t & AUC= A/a + B/b)
What is the AUC of the drug?
1) + AUC = 433.33 ug.hr/ml
2) - AUC = 350.33 ug.hr/ml
3) - AUC = 250.33 ug.hr/ml
4) - AUC = 100.33 ug.hr/ml

14) After administering a single intravenous dose (5 mg/kg) in female adult (average weight 60 kg). The pharmacokinetics fits a two-compartment model:
Cp= 60 e-0.2t + 40 e-0.3t
(assume that units of ug/ml for Cp and hr for t & K= Cp0/AUC)
What is the K of the drug?
1) + K = 0.231 hr^{-1}
2) - K = 231hr^{-1}
3) - K = 2.31 hr^{-1}
4) - K = 0.229 hr^{-1}

15) After administering a single intravenous dose (5 mg/kg) in female adult (average weight 60 kg). The pharmacokinetics fits a two-compartment model:
Cp= 60 e-0.2t + 40 e-0.3t

(assume that units of ug/ml for Cp and hr for t)
What is the plasma level of the drug 10 hours after the IV dose?

1) - Cp = 101.1 ug/ml
2) - Cp = 16.72 ug/ml
3) - Cp =8.26 ug/ml
4) + Cp =10.11 ug/ml

16) After administering a single intravenous dose (5 mg/kg) in female adult (average weight 60 kg). The pharmacokinetics fits a two-compartment model:
Cp= 60 e-0.2t + 40 e-0.3t
(assume that units of ug/ml for Cp and hr for t & t 1/2 = 0.693 /b)
What is the elimination half-life of the drug?

1) + t ½ = 2.31 hr
2) - t ½ = 231 hr
3) - t ½ = 23.1 hr
4) - t ½ = 31.2 hr

17) A single oral dose (5mg/kg) of an antibiotic was given to an adult male patient (60 kg). The equation that best fits the pharmacokinetics of the drug is
Cp= 40 (e-0.3t - e-0.5t)
(assume that units of ug/ml for Cp and hr for t & t max= ln (Ka / K) / Ka-K)
What is the tmax of the drug?

1) - t max = 3.545 hr
2) - t max = 5.554 hr
3) + t max = 2.554 hr
4) - t max = 2554 hr

18) A single oral dose (5mg/kg) of an antibiotic was given to an adult male patient (60 kg). The equation that best fits the pharmacokinetics of the drug is
Cp= 40 (e-0.3t - e-0.5t)
(assume that units of ug/ml for Cp and hr for t & Cmax = A(e-ktmax - e-katmax))
What is the Cmax of the drug?

1) + C max = 7.44 ug/ml
2) - C max = 1.487 ug/ml
3) - C max = 744 ug/ml
4) - C max = 14.87 ug/ml

19) A single oral dose (5mg/kg) of an antibiotic was given to an adult male patient (60 kg). The equation that best fits the pharmacokinetics of the drug is
Cp= 40 (e-0.3t - e-0.5t)
(assume that units of ug/ml for Cp and hr for t & Cp = A(e-kt - e-kat))
What is the plasma level of the drug 10 hours after the oral dose?

1) + Cp = 1.72 ug/ml
2) - Cp = 3.44 ug/ml
3) - Cp = 434 ug/ml
4) - Cp =172 ug/ml

20) A single oral dose (5mg/kg) of an antibiotic was given to an adult male patient (60 kg) with an average volume of distribution of 0.4 L/kg. The equation that best fits the pharmacokinetics of the drug is
Cp= 40 (e-0.3t - e-0.5t)
(assume that units of ug/ml for Cp and hr for t &Cp = A(e-kt - e-kat) & Cl= KVd)
What is the Cl of the drug?

1) - Cl = 6.3 L/hr
2) - Cl = 6.6 L/hr

3) - Cl = 72 L/hr
4) + Cl = 7.2 L/hr

21) A drug with an elimination half-life of 12 hour was given to a male patient (50 kg) by intravenous infusion at a rate of 10 mg/hr. The average plasma drug concentration was 20 ug/mL.
(assume that units of ug/ml for Cp and hr for t & Cpss = R /Cl)
What is the Cl for this drug?
1) - Cl = 1 L/hr
2) - Cl = 2 L/hr
3) + Cl = 0.5 L/hr
4) - Cl = 6 L/hr

22) A drug with an elimination half-life of 12 hour was given to a male patient (50 kg) by intravenous infusion at a rate of 10 mg/hr. The average plasma drug concentration was 20ug/mL and with an average volume of distribution of drug 35 L.
(assume that units of ug/ml for Cp and hr for t &
LD = Cp x Vd /F & MD = Cpss . Cl . DI / F)
What is the loading dose LD of the drug?
1) - LD = 400mg
2) + LD = 500mg
3) - LD = 350mg
4) - LD = 250mg

23) A drug with an elimination half-life of 12 hour was given to a male patient (50 kg) by intravenous infusion at a rate of 10 mg/hr. The average plasma drug concentration was 20 ug/mL and with an average total body clearance of drug 2L/hr.
(assume that units of ug/ml for Cp and hr for t &
LD = Cp x Vd /F & MD = Cpss . Cl . DI / F)
What is the maintenance dose MD of the drug? (A drug taken once daily)
1) - MD = 580mg
2) + MD = 1000mg
3) - MD = 480 mg
4) - MD = 250mg

24) A drug with an elimination half-life of 12 hour was given to a male patient (50 kg) by oral route . The range plasma drug concentration was 10 -30ug/mL and with an average total body clearance of drug 2L/hr.
(assume that units of ug/ml for Cp and hr for t &
LD = Cp x Vd /F & MD = Cpss . Cl . DI / F) and DI= 1.44 x T1/2 x ln (TW) : (TW= CPmax/CPmin)
What is the maintenance dose MD of the drug? (A drug taken once daily and F=0.7)
1) - MD = 5mg
2) - MD = 10mg
3) + MD = 1 mg
4) - MD = 2mg

25) A drug with total ∑AUC = 400 ug.hr/ml and ∑AUMC = 800 ug.hr2/ml
(assume that units of ug/ml for Cp and hr for t & MRT= ∑AUMC0 - ∞ / ∑AUC0 - ∞)
What is the MRT?
1) + MRT = 2hr
2) - MRT = 5hr
3) - MRT = 0.5hr
4) - MRT = 0.2hr

26) Examples of drugs showing nonlinear pharmacokinetics (GI Absorption)
1) - Omeprazole
2) - Propanolol

3) - Ribofalvin
4) + All

27) Examples of drugs showing nonlinear pharmacokinetics (Distrbution)
1) - Lidocaine
2) - Salicylic acid
3) - Ceftriaxone
4) + All

28) Examples of drugs showing nonlinear pharmacokinetics (Renal elimination)
1) + Ascorbic acid
2) - Omeprazole
3) - Lidocaine
4) - All

29) Examples of drugs showing nonlinear pharmacokinetics (Metabolism)
1) - Acetominophen
2) - Carbamazepine
3) - Phenytoin
4) + All

30) Pharmacokinetic Parameters:
1) + D - Cp - Cp0 - K -T1/2 - Cl - AUC - Vd
2) - D - Cp - Cp0 - K - Cl - AUC - Vd
3) - D - Cp - Cp0 -T1/2 - Cl - AUC - Vd
4) - D - Cp - Cp0 - K -T1/2 - AUC - Vd

31) Clinical pharmacokinetics is the application of pharmacokinetic methods to drug therapy in patient care. Clinical pharmacokinetics involves a multidisciplinary approach to individually optimized dosing strategies based on the patient's disease state and patient-specific considerations.
1) + TRUE.
2) - FALSE.

32) The apparent volume of distribution is a true physiologic volume.
1) - TRUE.
2) + FALSE.

33) Volumes of distribution (In litres for average 75 Kg adult)
1) - TRUE.
2) + FALSE.

34) Elimination rate constant:It is assumed that for a given drug in a given patient, a fixed proportion of the dose is eliminated every hour (or day etc).
1) + TRUE.
2) - FALSE.

35) Half-life:The time required for a 50% reduction in plasma concentrations of drug.
1) + TRUE.
2) - FALSE.

36) Clearance is a measure of drug elimination from the body without identifying the mechanism or process.
1) + TRUE.
2) - FALSE.

37) Digoxin enters cardiac muscle rapidly. So, for digoxin, cardiac muscle forms part of the second compartment.
1) - TRUE.
2) + FALSE.

38) Lidocaine enters cardiac muscle slowly. So, for lignocaine, cardiac muscle forms part of the first compartment.
1) - TRUE.

2) + FALSE.

39) Transfer constants (k12 & k21) describe movement of drug between the two compartments.
1) + TRUE.
2) - FALSE.

40) Most of the drugs observed to have flip-flop characteristics are drugs with fast elimination (ie, k > ka).
1) + TRUE.
2) - FALSE.