

Practical 5

Health & Medicine



Practical 5 Practical Report Two Question According to Weaving (2007, p. 27), the graph for intravenous injection of antibiotic will be the highest from the start, until all the drug content has been thoroughly utilized because, the drug will be in direct contact with blood, with no restricting membranes such as the stomach linings. Intramuscular injection will have a high graph but slightly lower than the intravenous injection. Oral injection will have the lowest level and, hence the lowest graph due to the many lining which restrict direct entry of drug into the blood stream. Lining in the stomach and the dilution of drug content by the saliva and enzymes found in the saliva such as amylase will also lower the content.

Question 2

Bactericidal antibiotics are the drugs that kill bacteria bactericidal being the agent that kill bacteria and can be done by heat or chemical. Bacteriostatic is a drug that restricts or slows the bacteria growth Weaving (2007, p. 28).

Question 3

According to Russell (2003, p. 63), viral infection include influenza caused by, influenza virus A or B. It can be treated by antiviral drugs such as Aspirin admitted orally. Fungus e. g. Eukaryotes, which live on, bread, cause mycosis due to ingestion of infected products. Fungal infections are best prevented than treated e. g. by avoiding sharing of towels, not wearing dirty clothing and consuming clean food. Drugs such as methylprednisolone can be administered orally to treat mycosis infections. A bacterial infection includes bacterial vaginitis, caused by normal bacteria and, treated by antibiotics such as metronidazole (Flagyl) administered by oral pill form or vaginal clindamycin cream (Cleoin) or (Tindamax).

Question 4

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This is because antimicrobial activity of drugs usually assessed by determination of both the minimal inhibitory concentration and the minimal concentration (MBC) of bactericidal drug in vitro after overnight incubation of aerobic in a liquid medium at pH 7.2 free of protein.

Practical Report Three

Question 1

Organisms are known to be vulnerable to nitrofurantoin if their inhibitory minimum concentration is not more than 32 micro grams per milliliter. The blood concentration of nitrofurantoin at peak, subsequent to an oral dose of 100 milligrams nitrofurantoin, is less than 1 micro grams per milliliter, and may be unnoticeable; penetration of tissue is insignificant; the drug is well concentrated in the urine: the liver metabolizes around 75% of the dose rapidly, but urine excretion, 25% of the dose is unchanged, reliably achieving levels of 200 micro grams per milliliter or more. For this reason, nitrofurantoin cannot be used as a cure to anything, other than minor cystitis.

Question 2

Immunoassay is a test of biochemical, which measures the concentration or existence of "analyte" substance in solutions that commonly contain substances of a complex mixture. Immunoassay methods frequently measures analytes in liquids of biological nature such as serum or urine Russell (2003, p. 58).

Question 3

According to Weaving (2007, p. 29), it is appropriate to consider many factors when selecting antibiotics. Is the infecting organisms know or likely to be susceptible to the antibiotic? Will the antibiotic reach the site of

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infection in adequate concentration? What is the best route for administration (topical (unlikely), oral, intramuscular or intravenous)? How long should therapy continue? Is the patient allergic to the drugs that might be chosen? Are there any likely adverse or unwanted interactions with other drugs that the patient might be receiving? Can the patient excrete the drug satisfactorily or is the accumulation of sometimes highly toxic antibiotics likely?

Question 4

The antibiotic gentamicin is not permeable to cell membranes, a factor that, along with the gentamicin toxicity, eliminates its use against many notable intracellular bacterial infections. Of this drug, encapsulation of Liposomal, used to achieve delivery of intracellular antibiotic, and, therefore, increase the therapeutic activity of drug against pathogens.

Question 5

According to Weaving (2007, p. 28), Herpes treatment options, for infections, largely based on whether, an individual has contracted oral herpes, or genital herpes, and how recurrent and severe his signs are.

Recommendation on medications may or may not be essential. Use of antibiotics is not the immediate option since some has no treatment. There are many things one can do to act as an urgent assistance of discomfort of herpes during an occurrence.

6. An antiseptic, a form of medicine that for killing microorganisms on surfaces of bodies while a disinfectant is used for same functions on surfaces of nonliving organs. Disinfectants can, therefore, be more powerful than antiseptics.

Practical Report Four

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Question 1

According to Russell (2003, p. 65), Siderophores is iron (III) transport compounds, extensively distributed in facultative anaerobic microbial and aerobic species. Similar to the acquisition of iron from other low-molecular-weight chelates, iron acquisition from the Siderophores is independent of ATP, induced by metals of multivalent cationic, and unaltered by endocytosis and pinocytosis inhibitors. Siderophores is produced by enteric bacteria such plant pathogenic bacteria and fungi such as soil microorganisms.

Hydroxamates are produced by fungi and catechols are produced by plant pathogenic.

Question 2

Salmonella is known to synthesize receptors for Siderophores other than its own, which could be an advantageous when present with other microorganisms, particularly in the competitive environment of the gut.

Question 3

Pathogen city island result from horizontal gene transfer, differentiate pathogens from their relatives and is characterised e. g. by different G/C content from genome average. They carry functional genes, such as transposases, integrases, or part sequences of insertion, to enable DNA insertion into host. Different UPEC, of pathogen city island, sequence data isolation show the presence of additional genes with significant homologies to cluster of adhesin gene such as those of *Proteus mirabilis* fimbriae (Pmf) encoding, the heat resistant hem agglutinin of *E. coli* enterotoxigenic, and *Streptococcus sanguis* protein of saliva-binding Kaper and Hacker (1999, p. 38).

Question 4

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Deferoxamine (desferrioxamine B) has a high affinity for trivalent iron binding that can be clinically exploited to eliminate excess blood and tissue iron. It is applied in the treatment of acute iron poisoning and anemia iron-overload, such as radical thalassaemia, as well as poisoning of aluminum associated with renal dialysis chronic. It is treated in four main stages, the first of these is the gastrointestinal, the second stage is a quiescent period, the third stage is acidosis and the fourth stage are characterized by the after effects of mucosal corrosion such as stricture formation and pyloric steno.

Bibliography

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