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PAPER MICROBIOLOGY

EXAM FINAL

SECTION BS MLT B

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Q3]

STAGES OF PATHOGENESIS;

.Parhogenesis is the method by which a disease can develop.

.This can occur through foodborne intoxication where the causative agent produces toxins where the causative agent produces toxins in the body e.g botulism.

.THE relation between a host and pathogen is dynamic.

.Produce of disease occurs through a process of steps.

. The first five mechanism make up a pathogen invasiveness e g ability to invade tissues.

 STAGES

1] TRANSMISSION

 . IN oder to begin infection and eventually cause disease pathogen musr find a transmission route.

. Transmission of an infection agent can occure in many ways but it is typically through exposed skin eg a cut abrasion puncture or wound or mucous membrane eg gastrointestinal tract or urogential tract.

2] ADHERENCE

.Once the pathogen has gained access to the body it must have some means of attaching itself to the host tissues.

.This attachment is called adherence and is necessary step in pathogenicity .

.Microbes contain ligand which are progection that attach host receptors or surface protein.

3] INVSDION

.AT this point microbes begin to invade the host and produce a bacteremia presence in the blood stream or viremia presence of a virus in the blood stream.

.ONCE this barrier has been penetrated these pathogens can multiply without competiton.

4]COLONIZATION

.Colonization is the multiplication of pathogenic organism here toxins are produced and the normal flora are overcome.

. During this stages pathogens compete with normal flora for space and nutrients.

5]EVASION OF THE HOST DEFENSES

.Pathogens must also avoid adapted defence.

.They can also utilize antigenic variation t alter the anitegen structure.

.AFTER colonization pathogen circumvent the host innate adapted defances by phagocytosis.

6] CAUSE DAMAGE OR DISEASE TO HOST

.Damage can occur through direct or indirect pathway.

.THREE types toxins are produce to cause damage.

. EXOTOXINS PROTEIN secreted by pathogen that cause damage to the host botulinum toxin tetanus toxin.

ENDOTOXINS TOXIC substances that are released hen a cell is killed lipolsaccharides.

.EXOENZYMES Enzymes that function outside the host cell or tissues.

7] EXITING THE HOST.

.A pathogen must exit the body .

.THIS occurs through various route.

Q2

NORMAL FLORA.

.Normal flora are microorganism mostly bacteria that continuously inhibited the human body under normal condition in a health human they are harmless and may even be beneficial.

.ALSO called commensales organism that dine together.

IMPORTANT OF THE NORMAL FLORA ADVANTAGES

.THE oral flora contribute to immunity by inducing low level of circulating and secretory antibodies tht may cross react with pathogens.

DISADVANTAGES OF NORMAL FLORA

THE noral flora may antagonize other bacteria through the production of substance which inhbit or kill nonindigenous species 19 importance of the normal flora disadvantages they can cause disease in the following when individuals become immunocompromised.

Q5

1 SYMBIOTIC RELATIONSHIP

SYMBIOTIC relationship are a special tye of interaction between species . sometime beneficial sometimes harmful these relationship are essential to many organisms and ecosystem and they provides a balances that can only be achieved by working together.

2]ANTIMICROBIAL DRUGS

THERE are mainly two classes antimicrobial drugs those obtained from natural sources[ e g] beta lactam antibiotic such as penicillins cephalosporins] or protein synthesis inhibitors such as aminoglycosides macrolide s tetracylines chloramphenicol polypeptides and synthetic agent.

3] PROBIOTICS

Probiotics are live bacteria and yeasts that are good for you especially your digestive system we usually think of these are germs that causes diseases but your body is full of bacteria both good and body probiotics are often called good or helpfull bacteria because they help keep your gut health.

4]PREBIOTIC

 PREBIOTIC ARE COMPOUND in food that induce the growth or activity of beneficial microorganisms such as bacteria and fungi the most common example is in the gastrointestinal tract where prebiotics can alter the composition of organism in the gut microbiome.

5

5] ANTIMICROBIAL RESISTANCE

Antimicrobial resistance happen when microoraganisms such as bacteria fungi viruses and parasites change when they are exposed to antimicrobial drugs such as antibiotic antifungals antivirals antimalarials and anthelmintics resistance are sometimes referred to as superbugs,,.

As a result the medicines become ineffective and infection persist in the body increasing the risk of spread to others.

Q4]

GENE TRANSFER

IN bacteria or other organism gene transfer mainly two way

1] vertical gene transfer

2] Horizontal gene transfer

 HORIZONTAL GENE TFRANSFER

Transfer of gene between cells of the same generation in two different species.

DNA acquired from unrelated individuals.

THERE are three types of horizontal gene transfer.

1]Transformation.

2] TRANSDUCTION.

3] CONJUGATION.

Bacteria do not have an obligate sexual reproductive stage in their life cycle but they can be very active in the exchange of genetic information the genetic information carried in the dna can be transferred from one cell to another how ever this is not a true exchange because only one partner receive the new information in addition the amount of DNA that is transferred is usually only a small piece of the chromosome there are several mechanism by which this take place in transformation bacteria take up free fragment of DNA that are floating in the medium to teke up the DNA efficiently bacteria.

Q1] MCQS

1] Ecoli candida albican

2] fruite vegettable

3] bactariostatic

4]Microbiota

5]Lichen

6]Conjugation

7]Plasmid

8]Normal flora

9]Transcription and translation.

 The end