***Pseudomonas aeruginosa***

Pseudomonas aeruginosa is acommon bacterium that cause disease in animals ,human.it it is found in soil ,water ,and skin flora.

An opportunistic human pathogen which mean they become dangerous in sick or in burner people.



***Properties***

1-it is motile

2-rod shaped

3-gram-negative

4-occurs as a single bacteria ,in pairs,and in short chains

5-grow at 37-42 C

6-its oxidase –positive

7-it does not ferment carbohydrates,but many strains oxidize glucose

8-non spore formation and non capsulated

***Culture characteristics***

1-obligate aerobe

2-sometimes producing a sweet or grape or corn taco –like odor

3-produce pigment on culture media:-

A-pyocyanin—nonfluoresent bluish pigment .

B-pyoverdin—fluoresent pigment gives a greenish color.

C-pyorubin—dark red pigment.

D-pyomelanin-black pigment.

***Virulence factors***

1-pili-extend from the cell surface and promate attachment to host epithelial.

2-the exopolysaccharide-responsible for the mucoid colonies seen in cultures.

3-the lipopolysaccharide-responsible for many of the endotoxic properities of organisms.

4-many strains produce exotoxin A,which cause tissue necrosis.

5-produce extracellular enzymes,including elastases,and proteases,and two hemolysins;aheat-labile phospholipase C and aheat-stable glycolipid.

***Distinguish factors***

***Clinical identification of p.aeruginosa often includes identifying the production of both pyocyanin and fluorescein as well ability to grow at 42 C.***

***Pseudomonas aeruginosa infection***

Awide array of pseudomonas infection affect human and other animals such as:-

1-pneumonia.

2-urinary tract infection.

3-heart infection.

4-ear infection.

5-infection of the joints.

***Tranmission***

1-transmission occur from patients to patient on the hands of healthcare workers.

2-by patient contact with contaminated tools.

3-by the ingestion of contaminated material.

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***Diagnostic laboratory tests***

A-specimens:-

Specimens from skin lesions,urine,blood,spinal fluid.

B-smears:-

Gram-negative rod are often seen in smears .there are no specific morphologic characteristics that differentiate pseudomonas in specimens from other gram-negative rod.

C-culture:-

Pseudomonas aeruginosa does not ferment lactose and easily differentiated from the lactose fermenting bacteria.

Culture is specific test for diagnosis of p.aeruginosa infection.

***Treatment***

Clinically significant infections with p.aeruginosa should not be treated with single –durg therapy,because the success rate is low with such therapy and because the bacteria can rapidly develop resistance when single durgs are employed.

-its resistance to large range of antibiotics and may demonstrate additional resistance after unsuccessful treatment.

-A penicillin such as piperacillin active against p.aeruginosa is used in combination with an aminoglycoside.



***Refrences***

***1-pseudomonas aeruginosa –wikipedia,the free encoclopedia***

***2-medical microbiology***