

Solved By; M. AMIR

Roll Num F18-076

3rd year MBBS

**3rd YEAR MBBS
SPECIAL BACTERIOLOGY
OBJECTIVE STRUCTURED PERFORMANCE EVALUATION (OSPE)**

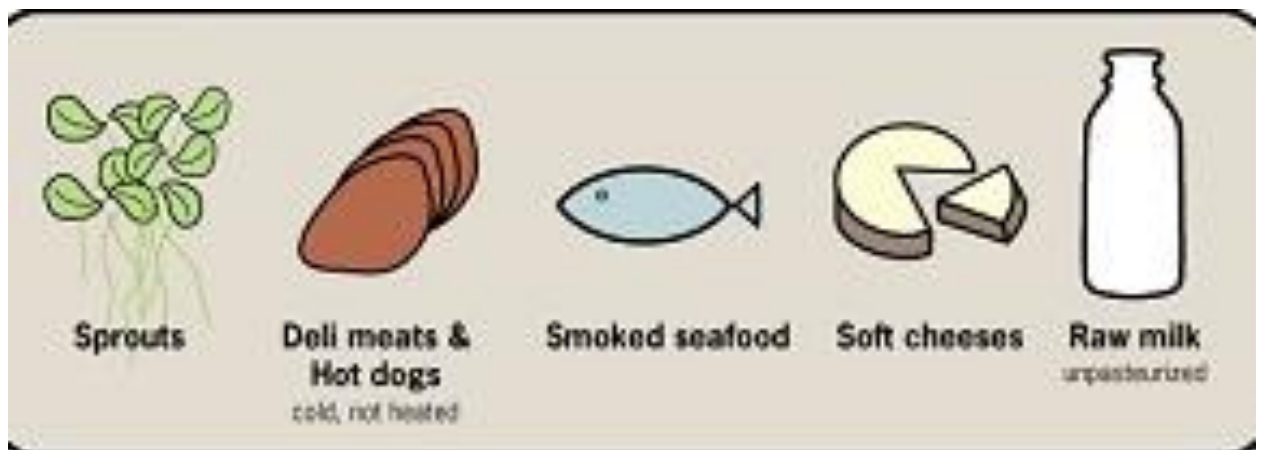
OBSERVED STATION

Marks: 03

Time allowed: 04 minutes

For Candidate

A young lady really fond of eating cheese and other dairy products developed diarrhea. A gram positive rod growing well at low temperature was identified.



1. What could be the possible cause? (1)
2. What is the pathogenesis of this disease? (1)
3. Name one other organism which can cause diarrhea. (1)

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key.

1)listeria monocytogenes

2)listeriolysin _allow to it to escape from phagosome into cytoplasm.

3)staphylococcus aureus, Bacillus cereus,v.chlera,E.coli,shigella,salmonella

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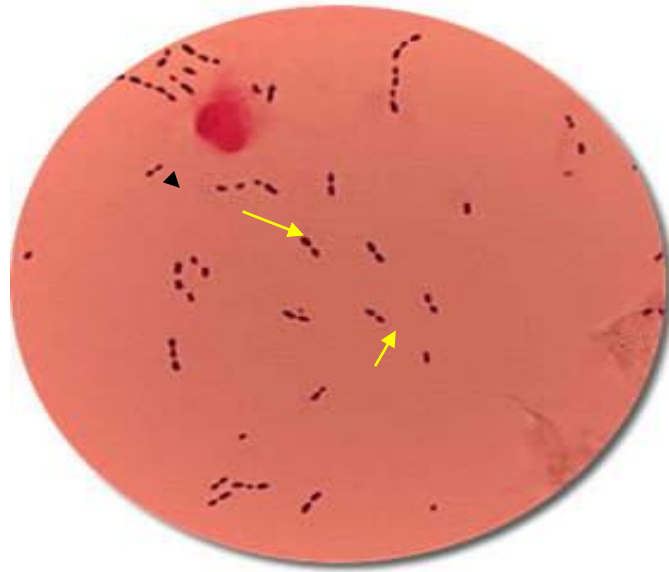
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For Candidate

A young boy developed fever with chills & production of rusty sputum. He was suspected to have pneumonia. Sputum sample was cultured which revealed lancet shaped gram positive diplococcic.



1. Identify the causative agent. (0.5)
2. Is this organism alpha hemolytic or Beta hemolytic? (0.5)
3. Enumerate two biochemical test used for its diagnosis? (2)

ans.

1)streptococcus pneumoniae

2)alpha

3)optochin sensitivity test,capsular swelling test,gram staining,bile soluble test

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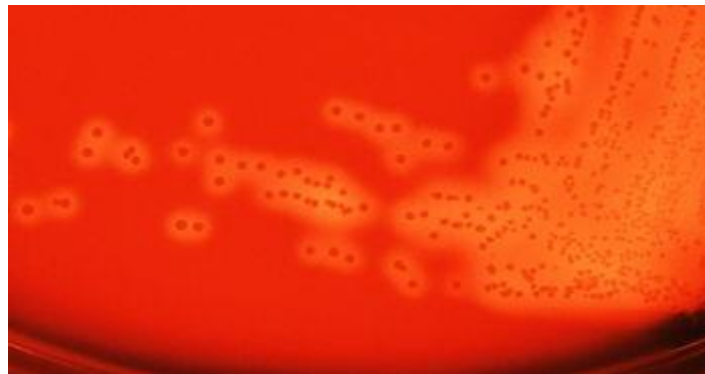
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For Candidate

A 13 year old child presented with high grade fever, productive cough and a red tender throat. A culture was taken and empirical therapy was started. The colonies grown showed beta hemolysis and were bacitracin sensitive.



1. Name the causative agent. (1)
2. What are the three modes of pathogenesis of this organism? (1)
3. Name the two post Streptococcal diseases produced by this organism. (1)

ans

1)streptococcus pyogenes

2)pyogenic,toxigenic immunomediated

3)cellulitis,impetigo,sepsis,pharyngitis

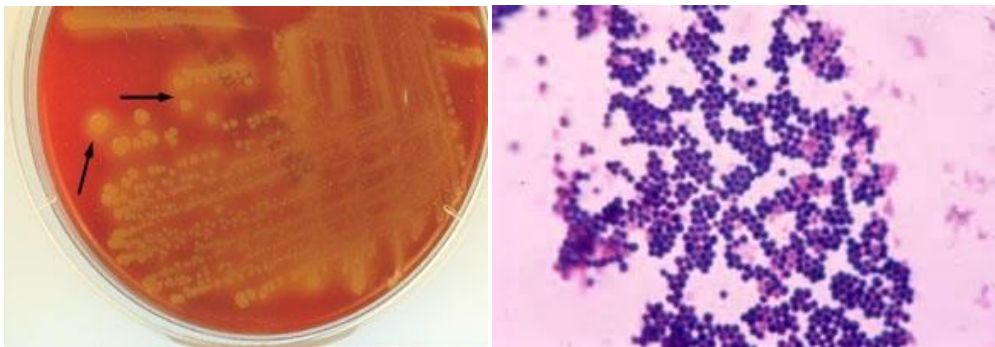
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A young female using tampons developed signs and symptoms of shock. Her blood culture and Gram stain revealed the following results:



Blood Culture

Gram Stain

1. Name the disease and the pathogen causing it. (1)
2. Why are these colonies on blood agar yellow? (1)
3. Which virulence factor of bacteria is responsible for her condition? (1)

ans

1)toxic shock syndrome by S.aureus

2)due to carotid pigments

3)Tss toxin

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A young boy developed fever with large bullae & erythematous macular rash, causing sloughing of skin & electrolyte imbalance, as shown in the picture. His cultures revealed the organism showing the following biochemical tests positive:



1. Name the disease and the causative agent. (1)
2. Name these biochemical tests. (1)
3. These biochemical tests are used to differentiate which species of bacteria? (1)

ans

1) scaled skin syndrome by *S.aureus*

2) Dnase and Coagulase tests

3)from s.aureus from S.epidermidis and S.sapropticus

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A patient developed folliculitis. Pus was cultured which revealed Gram positive cocci in clusters.



1. Name the causative agent. (0.5)
2. Name the two sites where this organism is present as flora. (1)
3. Name the three toxins produced by this organism. (1)
4. Name one important drug used for treatment of MRSA. (0.5)

ans

1)S aureus

2)skin

3)enterotoxin,Tss,toxin,alpha toxin exfoliative toxin

4) vancomycin

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A five year old boy developed Diffuse erythematous, maculopapular rash, erythema & edema of hands, strawberry tongue, edema of lips & erythema of oropharynx). Blood culture revealed Gram positive cocci, showing Coagulase positivity and mannitol fermentation.



1. Name the disease and the causative agent. (1)
2. What is Beta lactamase and its treatment? (2)

ans

1) impetigo caused by either s.aureus or pyogenes

2)s.aureus contain plasmid that contain b.lactamase which degrade penicillin .

b-lactamase inhibitors:

clavulanic acid,tazobactam

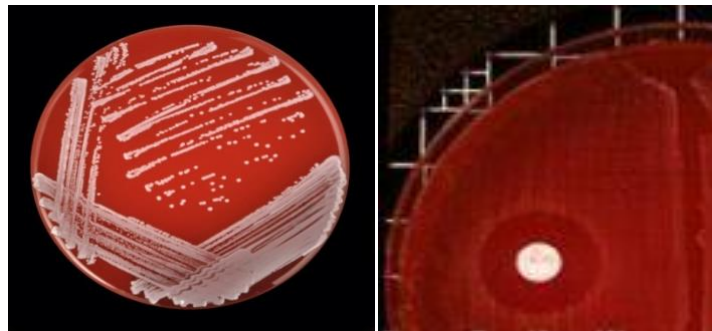
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An immunocompromised patient developed endocarditis caused by a normal flora of skin. Blood culture revealed the following results, showing novobiocin sensitivity.



1. Name the causative agent. (1)
2. Novobiocin is used to differentiate which two bacteria? (1)
3. Name one other endocarditis causing bacteria. (1)

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1)Staphylococcus epidermidis

2) S. epidermidis from S. saprophyticus

3)

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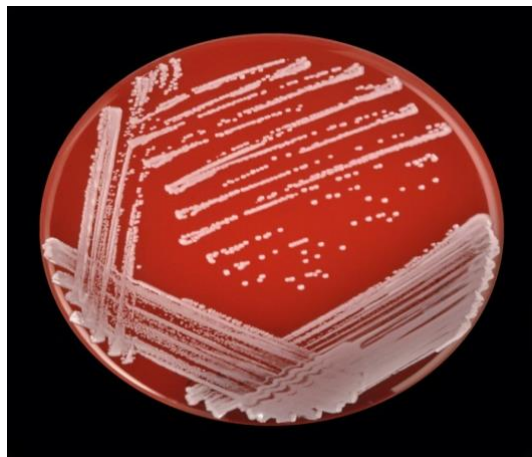
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For Candidate

A young female patient presented with signs and symptoms of urinary tract infection. Urine culture revealed white colored colonies, resistant to novobiocin.



1. Name the causative agent. (1)

2. Name two other causative agents of urinary tract infection. (1)
3. Is this organism coagulase positive? (1)

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1)S.saprophyticus

2)E.coli,proteus

3) positive

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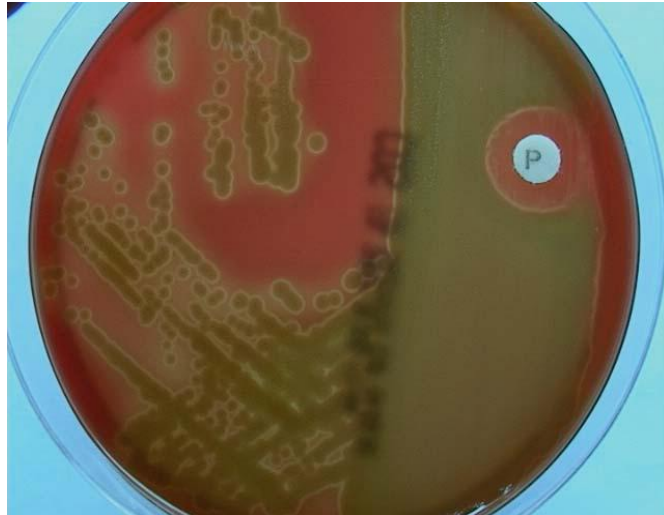
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Sputum culture of a patient having signs and symptoms of pneumonia revealed the following results.



1. Why are these colonies green? (1)
2. Name the causative agent. (1)
3. Name the other organism producing green color on blood agar. (1)

ans

1)incomplete hemolysis

2)*S.pneumoniae*

3)*s.viridans*