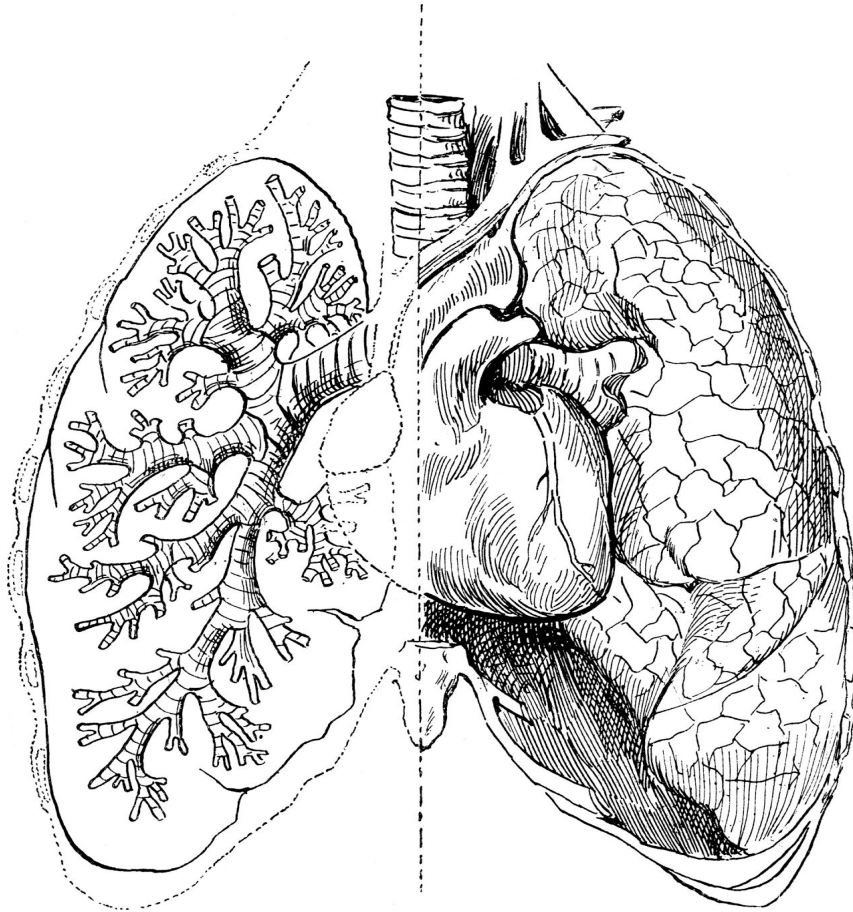


# Pneumonia Questions

435's Teamwork  
Respiratory Block

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- The document includes SAQ scenarios and MCQs.
  - Please contact the team leaders for any suggestion, question or correction.  
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## Lecture 1 MCQs

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Q1: The most causative agent in ventilated patients with late-onset pneumonia is?

- A | MRSA.
- B | S.aureus.
- C | Acinetobacter.
- D | Anaerobes.

Q2: HAP is the second most common nosocomial infection after:

- A | Surgical site infection (SSI).
- B | Urinary tract infection (UTI).
- C | Bloodstream infection (BSI).
- D | A&B.

Q3: A 31 year old male, admitted to the hospital 6 days ago complaining from chest pain and coughing. He has a chronic lung disease and he's on corticosteroids. Which one of the following causative agent is more commonly seen in his case?

- A | S.aureus.
- B | Anaerobes.
- C | P. aeruginosa.
- D | MRSA

Q4: All of the following is a feature of CAP EXCEPT:

- A | Contracted by a person with little contact with the healthcare system.
- B | Usually caused by Pseudomonas aeruginosa.
- C | Most cases caused by Streptococcus pneumoniae.
- D | None of the above.

Q5: Early-onset nosocomial pneumonia:

- A | P. aeruginosa.
- B | MRSA.
- C | MSSA.
- D | Klebsiella.

Q6: If MRSA is suspected in Patients with S. aureus infection, what is the most appropriate antibiotic in their case?

- A | Tetracycline.
- B | Erythromycin.
- C | Clindamycin.
- D | Vancomycin.

Q7: One of the advantages of combining vancomycin with linezolid is:

- A | Less hepatotoxicity.
- B | Less nephrotoxicity.
- C | Both a & b.
- D | Increase secretion.

Q8: The most common pathogenicity of pneumonia is:

- A | Impairment of host defenses.
- B | Highly virulent organisms into the lower respiratory tract.
- C | Microaspiration of upper airway secretions, through inapparent aspiration.
- D | Contaminated water.

Q9: The traditional approach of antipseudomonal drugs combination is:

- A | Antipseudomonal Beta-lactam with a Fluoroquinolone.
- B | Antipseudomonal Beta-lactam with a penicillin.
- C | Antipseudomonal Beta-lactam with a quinolone.
- D | Antipseudomonal Beta-lactam with Aminoglycoside.

Q10: A major factor that increases the resistance of gram negative bacilli is:

- A | Prior use of broad-spectrum antibiotics.
- B | immunocompromised person.
- C | Both a & b.

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Answer key: ( Q1: C - Q2: B - Q3: D Q4: C Q5: C Q6: D Q7:B Q8: C Q9: D Q10: C)

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## Lecture 2 MCQs

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Q1: Typical bacterial pneumonia is caused by:

- A | Mycoplasmal pneumonia.
- B | Legionnaires pneumonia.
- C | Pneumocystis carinii.
- D | Staphylococcus aureus.

Q2: An 8 year old child boy came to the hospital complaining from fever and cough with sputum, his doctor diagnosed his condition as CAP, which organism is most likely to be seen in his case?:

- A | H. influenzae type B.
- B | Group A hemolytic streptococci.
- C | Mycoplasma pneumoniae.
- D | S.aureus.

Q3: Can a 28 year old female diagnosed with atypical CAP be treated with penicillin?

- A | Yes, she can.
- B | No, because penicillin is sensitive to atypical CAP.
- C | No, because penicillin is resistant to atypical CAP.
- D | b&c.

Q4: All of the following can be used to diagnose atypical CAP EXCEPT?

- A | ESR and C-reactive protein.
- B | X-rays.
- C | Gram stain.
- D | All the above apply.

Q5: Pneumococcal resistance to  $\beta$ -lactams can be overcome by increasing  $\beta$ -lactam doses EXCEPT for:

- A | Sinusitis
- B | Meningitis
- C | Bacteremia
- D | Pneumonia

Q6: A 34 year old patient visited the local hospital complaining from dry cough and malaise, his doctor heard a few crackles while performing the general examination on the patient. What type of organism is most likely seen in his case?

- A | S.aureus
- B | Mycoplasma pneumonia
- C | E.coli
- D | H. influenzae

Q7: The previous case can be treated with which of the following drugs?

- A | Penicillin
- B | Cephalosporin
- C | Macrolide
- D | Vancomycin

Q8: A 43 year old male suffering from headache and sore throat, which developed gradually, came to the hospital to seek help. What is the most causative agent in his case?

- A | Mycoplasma pneumoniae
- B | S.pneumoniae.
- C | Legionella.
- D | a&c

Q9: A 42 shepherd came to the primary care with chest pain and cough. What type of pneumonia does he have?

- A | CAP.
- B | HAP.
- C | VAP.

Q10: A person with Legionella pneumophila can be best treated with:

- A | Vancomycin.
- B | linezolid.
- C | Erythromycin.
- D | ceftazidime.

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Answer key: ( Q1: D - Q2: A - Q3: C Q4: C Q5: B Q6: B Q7:C Q8: D Q9: A Q10: C )

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## SAQs

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Q1: A 35-year-old male, presents with fever and cough. He was well until 3 days earlier, when he suffered the onset of nasal stuffiness, mild sore throat, and a cough productive of small amounts of clear sputum. Today, he decided to seek physician assistance because of an increase in temperature to 38.3°C and spasms of coughing that produce purulent secretions. On one occasion, he noted a few flecks of bright-red blood in his sputum. The patient has no history of familial illness, hospitalizations, or trauma.

1- What type of Pneumonia does the patient have?

Answer: Community acquired Pneumonia.

Explanation: Because of his clean history of familial illness, hospitalizations, or trauma.

2- Give one example of an organism that usually causes CAM?

Answer: *Streptococcus pneumoniae*.

Explanation: Many studies have examined the etiology of CAP. Virtually all studies in a compilation of 15 trials showed that *S pneumoniae* was the most common pathogen (20%– 60% of cases).

3- What type of antibiotic is suitable in his case?

Answer:  $\beta$ -lactam antibiotic such as amoxicillin.

Q2: A 52-year-old woman with known moderately severe tobacco-induced chronic obstructive pulmonary disease presents with fever and 2 days of left lower quadrant abdominal pain, fever, and an elevated white blood cell (WBC) count. Her doctor sent her to the ICU because of her underlying chronic obstructive pulmonary disease and poor oxygenation. On day 7 of mechanical ventilation, the nurses report purulent endotracheal tube suction specimens concomitant with a temperature increase back to 38.5°C. The WBC count is 16,000.

1- What type of Pneumonia does she have?

Answer: Ventilator-Associated Bacterial Pneumonia.

Explanation: Because she's on mechanical ventilation.

2- Write two important process in the pathogenesis of this type of pneumonia.

Answer:

1- Bacterial colonization of the aerodigestive tract.

2- Aspiration of contaminated secretion into the Lower airway.

3- Give an example of a pathogen that can cause it.

Answer: *Pseudomonas aeruginosa*.

4- How can you prevent it from happening?

Answer: By giving The oral regimen (topical Gentamicin, Colistin, Vancomycin cream given every 6h for 3 weeks).

Q3: A 47 year old man presents with dyspnea, fever and a wet cough (with sputum), started 4 days ago, his doctor did an x-ray on him and found an enlargement in the whole right anterior lobe of the lung. The laboratory findings indicated an increased WBC level.

1- What laboratory findings will help you diagnose this patient other than ESR?

Answer:

- 1- Sputum Gram stain.
- 2- Blood culture.
- 3- Pleural effusion culture.

2- What is your final diagnosing?

Answer: Lobar pneumonia.

Explanation: Lobar: Because there is an enlargement in the whole right anterior lobe of the lung.

3- What is the most causative agent in his case?

Answer: *Streptococcus pneumoniae*.

4- Is penicillin a good treatment in his case? why?

Answer: Yes, it can be good.

If we increase the dose it'll overcome the resistance.



Q4: A 29 year old female, presents with fever and dry cough which has been going on for the past 2 days. She's an english teacher in a public school, she loves her work, but the only issue she had is that the place is so crowded.

1- What organism would cause her pneumonia?

Answer: Mycoplasma pneumonia.

2- Do  $\beta$ -lactams work in her case? why?

Answer: No, because Mycoplasma pneumonia has no wall, and  $\beta$ -lactams exert their action by inhibiting the peptidoglycan layer of the cell wall.

3- What antibiotic is suitable for her?

Answer: Macrolide.