

## Chapter 16

### CASE STUDY 16.1 Viral resistance

Has answers within the text.

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### Case Study 16.2 Importance of 16S testing

- What laboratory tests would you suggest are performed on the patient? Consider tests across all laboratories.

Multiple blood cultures and a sample of respiratory secretions. The latter for bacterial and viral culture.

- What do you think is causing the patient symptoms?

Probable bacterial endocarditis.

- Would you start the patient on any antimicrobial therapy – if so what would you suggest and why?

Amoxicillin and gentamicin based on guidelines.

- What could be the bacterial causes of the positive blood cultures?

Based on a Gram-negative organism being isolated consider HACEK group of organisms.

- Would your proposed antibiotic therapy cover the possible causes?

Yes, amoxicillin and gentamicin would be good therapeutic choices.

- Why do you think flucloxacillin was substituted for amoxicillin?

It has no effect on Gram-negative organisms.

- Why do you think the gentamicin was stopped after 2 weeks?

Gentamicin has several side effects and after 2 weeks hopefully the organism has been treated successfully.

- Why do you think the mitral valve did not grow any organisms?

May have been killed by the antibiotics.

- What do you think would have been done if there were no 16S facilities available in terms of patient management?

Continued therapy and possible lack of an identification for the endocarditis.

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### Case Study 16.3 Controlling PCR reactions

- What tests would you suggest are performed in the BAL fluid? What are the possible infectious causes of the patient's respiratory failure?

Bacterial culture including legionella. Multiplex PCR for respiratory viruses.

- What does this suggest?

Invalid PCR run and needs to be repeated, may be due to extraction problems or inhibitory factors in the sample.

- What would your report be to the clinicians looking after the patient?

Invalid result please repeat.

- What would you suggest is done next to obtain a diagnosis for the respiratory failure?

Repeat sample and re-run test.

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