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What is ventilator-associated pneumonia?

Ventilator-associated pneumonia, or VAP, is a lung infection that a person can get while they are on a ventilator. A ventilator is a special breathing machine that delivers oxygen to a patient through a tube that is placed in the mouth, nose or through a hole in the front of the neck. Ventilators are often used in patients that are very ill or in patients undergoing certain kinds of surgery. Most ventilators are used in healthcare facilities, but some people may need them while receiving care at home.

What are the symptoms of VAP?

VAP can cause a variety of symptoms including cough, fever, chills, thick mucus, nausea, vomiting, shortness of breath, chest pain and loss of appetite.

How can VAP occur?

The germs that cause VAP can be spread in various ways. Germs can be carried on the hands of healthcare workers, so if they do not wash their hands before handling the ventilator equipment or inserting the ventilator tube (intubation), they might spread germs. Another way germs can be spread is on equipment that has not been properly cleaned. If germs are present on or in the ventilator tube, they can travel to the lungs and cause an infection. All parts of the ventilator must be cleaned thoroughly between use. Finally, germs may get into the lungs by aspiration, which is when a patient accidentally breathes in foreign materials from the mouth or stomach. These materials, such as liquids or food particles, can harbor germs that can get into the lungs and cause infection.

Fast Facts

- VAP is a lung infection seen patients on a ventilator.
- VAP causes a variety of respiratory symptoms.
- VAP is spread through unclean equipment or respiratory transmission.
- Anyone on a ventilator is at risk for VAP.
- Testing is required for diagnosis.
- Washing hands and properly cleaning equipment are the main prevention methods.

Who is at risk for VAP?

Anyone on a ventilator can be at risk for developing VAP. Patients who are very ill or who have weakened immune systems are particularly at risk. Patients who must be on a ventilator for a long period of time, as well as patients who must lay down flat in bed, are also more likely to get VAP. Also, patients who smoke have a higher risk of developing VAP.

How do I know if I have VAP?

Your healthcare provider will need to run tests (i.e. blood sample or sputum sample) in order to determine if you have VAP. A chest x-ray may also be necessary.

How is VAP treated?

VAP is usually treated with antibiotics and/or the removal of the ventilator tube. Your healthcare provider will determine what the appropriate treatment is.

How is VAP prevented?

Proper hand hygiene is an important way to prevent spreading the germs that can cause VAP. Healthcare providers and visitors should always wash their hands with soap and water and use an alcohol-based hand sanitizer. In addition, the ventilator equipment should always be cleaned thoroughly in between uses.

Whenever possible, the head of the patient's bed should be kept in a raised position, between 30 and 45 degrees. This will help prevent the patient from accidentally breathing in any fluids or food particles that could potentially carry germs. The patient's mouth should also be cleaned on a regular basis to minimize the amount of germs.

Healthcare facilities should also educate family and visitors about VAP and how to prevent it. Family members should be encouraged to speak up for the patient if they have concerns, such as if they notice the bed is not at the recommended angle or if they want to know if the ventilator is still necessary.

Resources for VAP

All information presented is intended for public use.
For more information about VAP, please refer to:

<http://www.cdc.gov/HAI/vap/vap.html>

<http://www.cdc.gov/hai/>

For additional information on ventilator-associated pneumonia:

<http://bit.ly/IDOHVAP>

