**Bacterial Pneumonia**

*Research provided by the Kansas Association of Local Health Departments*

***What is it?***

Pneumonia, or pneumococcal disease, is an infection of the lungs that can be caused by the streptococcus pneumoniae bacteria, a similar bacterium than can also cause Strep Throat. This bacterium typically sits in the back of the throat and can move to the lungs that can cause severe or mild symptoms, depending on the case. The most common cause of pneumonia is caused by influenza or COVID-19. The common symptoms of pneumonia are difficulty breathing or cough. Many individuals may end up on a ventilator or have more severe infections such as sepsis.

***History and Treatment***

Pneumonia has been mentioned throughout human history, starting with early Greek civilization. Pneumonia remains a problem for all countries, despite vaccine efforts. The bacterium that causes Pneumonia was discovered in 1881 by France and the United States. Further research was able to create Gram Staining and determining the physical structure of the bacterium.

The United States developed treatments for pneumonia during the early 1900s including ant-pneumococcal serum therapy, which could reduce mortality rates to 7.5% if treated early. In the 1930s, the first antibiotic was introduced to treat pneumonia. However, antibiotic penicillin was discovered as a more effective treatment in the 1940s. Unfortunately, the bacterium variated to be resistant to antibiotics, making it harder to treat in present day.

***Vaccination***

A vaccination was created to prevent severe cases of bacterial pneumonia in 1977 called the PPV. This vaccine only protected against streptococcal bacteria. In 2000, an additional vaccine, the PCV, was introduced. The vaccine protects against more bacterial types that were traditionally resistant to antibiotics. Today, most children in the United States receiving a PCV vaccination as children.

***Impact***

While the PCV vaccine is relatively new in the United States, rates of bacterial pneumonia declined up to 99% since 2000 including those who are unable to get vaccinated. However, rates of pneumonia have increased from 2000 to 2010 – but the increases have been small. Overall, the vaccine continues to remain effective in preventing severe cases of pneumonia.

***What We Can Learn***

The pneumonia vaccine prove that vaccines do work more effectively than other treatments as a preventative measure. While antibiotics were originally effective, many diseases become antibiotic resistant over time, proving that vaccine prevention is the most effective intervention. In addition, pneumonia is a deadly disease for both children and older adults. Vaccines that prevent common diseases extend life for all types of people.

Sources & Further Reading:

<https://www.cdc.gov/vaccines/vpd/pneumo/public/index.html>

<https://www.cdc.gov/pneumococcal/about/symptoms-complications.html>

<https://www.news-medical.net/health/Pneumonia-History.aspx>

<https://www.cdc.gov/pneumococcal/clinicians/streptococcus-pneumoniae.html>

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