Management of Pneumonia

Name

Institution

Course

Instructor

Date

**Introduction**

According to the World Health Organization, lower respiratory tract infection forms the major communicable conditions that leads to death across the globe, with an estimate of close to 3.5 million deaths annually (Richard, Wunderink, Grant, & Waterer, 2014). Together, Influenza and pneumonia form the ninth major cause of death across the United States. The two conditions led to a total of approximately 50,000 deaths in 2010. Community acquire pneumonia has increasingly made its mark as one of the most threatening conditions across the globe, with its chances of causing death among hospitalized individuals escalating. The condition is deemed of great importance considering its cause of morbidity and mortality across all ages, without the need for underlying health conditions. The conditions severity is worsened with the increased resistance to medication. This paper is going to review the management of community acquired pneumonia, including the genomic issues, the basics of the disease, and the treatment considerations.

**The Research Process**

In order to come up with the relevant literature to this topic. It was necessary to conduct an online research of credible and reliable sources of information. it is important to note that not all the information that one may find online is credible and can be utilized in scholarly research. As such, keen attention was paid to the identification and utilization of peer-reviewed articles due to the credibility of the information included in such articles. The author thus utilized the Ebscohost online database to identify sources that were used. In this case, the author filtered the results to include only articles that were peer-reviewed, full-text, and between the year 2009 and 2016. This was ensured by checking the boxes for peer-reviewed and full-text, and adjusting the date bar.

The researcher then identified keywords that were keyed into the search box in order to generate topic-relevant results. Such words included pneumonia, community acquired pneumonia, treatment, genomic, biomarkers, diagnosis, pneumococcal, morbidity, mortality, and management. The author combined these words in turns and was able to generate a high number of results. The author then selected relevant results and was abler to come up with fifteen articles that were close to the topic. To narrow down the literature review, the author selected six peer-reviewed articles that were utilized in the review.

**The Management of Pneumonia**

Advancement in technology and medical research has made it easier to diagnose individuals with pneumonia and without any other underlying cardiopulmonary conditions. In most cases, a triad of infection evidence, signs and symptoms related to the respiratory system, and a changed or new radiography observed infiltrate are used to accurately diagnose individuals with pneumonia. Some of the symptoms associate with pneumonia include increased sputum production, cough, chest pain, shortness of breath, and abnormal pulmonary examination (Wilson & Schünemann, 2011). Nevertheless, diagnosis of CAP can be difficult in patients with pulmonary fibrosis, lung cancer, or congestive heart failure. Diagnosis is also complicated by atypical presentations. Clinicians also face a challenge in diagnosing elderly patients with CAP as confusion is mostly the only presenting symptom, an aspect that results to delays in diagnosis (Wilson & Schünemann, 2011).

Ewig (2011) suggests that there are three interrelated decisions that have to be made when patients present with CAP for the first time. These decisions include the antibiotic therapy choice, the level of test to be carried out in order to establish the cause of the pneumonia, and the location from which the patient will be treated, including inpatient, at home, or in the ICU (Ewig, 2011). The Infectious Disease Society of America and the American Thoracic Society (IDSA-ATS) provide guidelines for the management of patients admitted to the hospital’s regular unit, which involves first-line treatment using respiratory fluoroquinolone such as 750 mg of levofloxacin or 400 mg of moxifloxacin per day. On the other hand, IDSA-ATS recommends a combination of third generation or second-generation cephalosporin with a macrolide (Griffin, Zhu, Moore, Whitney, & Grijalva, 2013).

**Genomic Issues in Pneumonia**

According to Rello et al. (2009), *Streptococcus pneumoniae* forms thee major cause of community acquired pneumonia (CAP) across the world. As much as technological advancement has in a great way positively influenced the diagnosis of CAP, the microbiological tests that are currently available, including the use of sputum and blood cultures, hold limitations in terms of their clinical utility as a result of the delays that technicians face in waiting for results and low sensitivity. Rello (2009) also argues that in as much as the urinary antigen testing approach provides quicker results, the approach also presents various limitations such as the high rate of false-positives. However, employment of the polymerase chain reaction technique, a non-culture-based method, allows for rapid and accurate quantification of the involved bacterial load (Rello, et al., 2009). As such, it is clear that the available approaches in the diagnosis of pneumonia remain insufficient. This calls for a need of increased research with regards to the condition in order to establish factors that would precipitate its distinction form other respiratory conditions, and hence allow for the establishment of diagnostic tools with the appropriate biomarkers.

One of the main challenges faced by clinicians in the management of CAP involves identifying patients who are highly likely of developing septic shock or death and those who are likely to benefit more from adjuvant therapy or intensive care. According to Chalmers (2011), to assess the severity of CAP, patients are categorized into risk groups through employment of different scoring systems such as CURB-65 or pneumonia severity index (PSI) scores. As such as such scoring systems are highly effective when applied to large cohorts, they remain highly unreliable when applied on individual basis and hence cannot be used in making important clinical decisions (Chalmers, et al., 2011). With lack of microbiological information that can be used to assess the severity of pneumonia, the decision of whether to admit individuals into ICU remains solely in the hands of attending physicians, based on their observations.

**Conclusion**

It is evident that pneumonia is a condition of great importance in health care practice, considering its spread across all ages and lack of ties to other underlying conditions. The various challenges recorded in the diagnosis of the condition are of great concern the health care fraternity considering the increased need to curb the conditions and associated symptoms during the initial stages after onset. It is important for proper measures to be established in terms of developing diagnostic measures that would allow for isolation of pneumonia from other cardiopulmonary conditions. Proper tools for identification of the severity of the condition should also be reviewed to ensure that proper measures are put in place, including transferring patients to ICU, to prevent the conditions from advancing to the adverse stages.

References

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