EVALUATION OF EMPIRC MANAGEMENT OF PATIENTS HOSPITALIZED WITH COMMUNITY-ACQUIRED PNEUMONIA

Christie Claus, PharmD • Sherene Samu, PharmD • Edmund Hayes, MS, PharmD • Jeannene Strianse, RPH, MS • Christy Beneri, DO

BACKGROUND

In August 2011, the Pediatric Infection Disease Society and the Infectious Disease Society of America published the first evidence-based guidelines on the management of community-acquired pneumonia (CAP) in otherwise healthy infants and children under 5 years of age. Narrow-spectrum antibiotics are preferred to limit antimicrobial resistance. For fully immunized infants, the first line empiric treatment is narrow-spectrum amoxicillin or penicillin G.

METHODS

Retrospective chart review of admitted pediatric patients at a tertiary teaching hospital with a diagnosis of CAP to include appropriate diagnostic codes to include those that had pneumonia at the index hospital visit.

• Review what antibiotic was empirically initiated upon suspected diagnosis of CAP
• Determine if broad-spectrum antibiotics were overused. The overuse of broad-spectrum antibiotics is defined as any instance in which broad-spectrum antibiotics were not ordered according to the guidelines.
• Review prior antibiotic use prior to admission within the previous year
• Review any other antibiotics given throughout patient stay
• Review what medication the patient was discharged on
• Cost analysis of empiric antibiotics
• Cost of empiric antibiotic
• Cost of labor of administration
• Hospital length of stays
• If a course of broad-spectrum antimicrobial is used, found implementation of a lower cost plan adhering to the CAP in pediatric guideline is varied.

INPATIENT EMPIRIC THERAPY FOR PEDIATRIC CAP

Sample: 20 encounters

Epidemiologic data: 231 encounters

EMPIRIC TREATMENT OF CAP

Pneumonia

• Pneumococcal pneumonia
• Staphylococcus pneumonia

Malignancy

• Non-Hodgkin lymphoma
• Hodgkin lymphoma

Sepsis

• Septic shock

Systemic inflammatory response syndrome

• Sepsis

Hirsutism, urticaria

• None

OUTCOMES

Secondary outcome measures:

• Cost of each course of antibiotic used
• Number of doses
• Total cost of empiric antibiotic
• Cost of labor of administration
• Hospital length of stays cost

CASE REPORT DATA

• Sx w/ antibiotic
• Prior antibiotic use within previous year

Primary outcome measures:

• Primary outcome measurement:
• Empirc antibiotic
• Antibiotic choices upon culture/antibiogram
• Length of hospitalization
• Length of course
• Readmission within 30 days
• Time to resolution of observed clinical and vital sign abnormalities
• Mortality:
• Antibiotic at discharge

PRELIMINARY RESULTS

Data extract after inclusion and exclusion criteria initially applied via data extract: 231 encounters

Data range of discharge dates: 8/13/2013-9/17/2014

Readmitted within 30 days: 14 encounters

Age range: 5 months to 2 years at age

Length of stay range: 6-23 days

EVALUATION OF EMPIRC MANAGEMENT OF PATIENTS HOSPITALIZED WITH COMMUNITY-ACQUIRED PNEUMONIA

Primary:

• To assess if there is an overuse of broad-spectrum antibiotics in the empirical management of CAP in pediatric patients 3 months to 21 years of age.

Secondary:

• Conduct a cost analysis including the cost of the drug used, cost of labor of administration, and hospital length of stay costs.

• Determine if it is necessary to implement a power plan for CAP in pediatrics that adheres to the evidence-based guidelines of using narrow-spectrum antibiotic coverage.

CASE REPORT DATA

• Sx w/ antibiotic
• Prior antibiotic use within previous year

Primary outcome measures:

• Primary outcome measurement:
• Empirc antibiotic
• Antibiotic choices upon culture/antibiogram
• Length of hospitalization
• Length of course
• Readmission within 30 days
• Time to resolution of observed clinical and vital sign abnormalities
• Mortality:
• Antibiotic at discharge

Conclusions:

• According to the random sample from 231 encounters 90% of the patients were treated with ceftriaxone, 10% were treated with amoxicillin and 10% were treated with azithromycin.

References

Disclosures

From September 17, 2013 until September 17, 2014, about 230 pediatric patients were discharged with a diagnosis of pneumonia, pleural effusion or empyema. After the exclusion criteria was applied, a random sample of 20 patients was reviewed for the empirical treatment of CAP. Empiric treatment in the majority of patients was w/ the broad-spectrum antibiotic ceftriaxone. Further analysis will be completed to determine if these patients were appropriately treated. This preliminary data supports the hypothesis that broad-spectrum antibiotics are over prescribed. This project is aimed to point on the potential overuse of broad-spectrum antibiotics in the treatment of CAP in pediatric patients. It is concluded that broad-spectrum antibiotics are overused, a physician order set for the diagnosis of CAP will be implemented. This order set will be reducing the overuse of antibiotics, with the potential of limiting antimicrobial resistance.

• The study was supported in part by the Pediatric Infectious Disease Society and the Infectious Disease Society of America. Clinical Infectious Diseases - an official publication of the Infectious Diseases Society of America.

• The patient's information was deidentified by the database system prior to any analysis.

• The investigators were employed by a university-based health system.

• The study was supported in part by the Pediatric Infectious Disease Society and the Infectious Disease Society of America. Clinical Infectious Diseases - an official publication of the Infectious Diseases Society of America.

• The patient's information was deidentified by the database system prior to any analysis.

• The investigators were employed by a university-based health system.

• None