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Infection and Tropical Disease

INF-PP-2-2-045

Clinical profiles of children with typhoid fever

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Abstract

Background Clinical manifestations of children with typhoid fever are various. A previous study (1999) in Soetomo Hospital showed 100% children with typhoid had fever, along with common signs and symptoms as hepatomegaly (78%), anorexia (71%), meteorism (59%), abdominal pain (37%), vomiting (40%), constipation (44%), diarrhea (22%), delirium (13%) and splenomegaly (9%).
Objective To describe the presenting signs and symptoms of typhoid fever in children
Methods This was a cross sectional medical record based study comprising patients during 2010-2012. Children were diagnosed as typhoid fever based on clinical presentations and positive IgM Salmonella (tubex). We looked for age of patients, cough, nausea, headache, sore throat, vomiting, constipation, diarrhea, typhoid tongue, encephalopathy, hepatomegaly, and splenomegaly.
Results There were 31 cases in this study with the median age of 9 years (2-16 years). Fever occurred in all patients. Other sign and symptoms were nausea (25), vomiting (24), meteorism (21), diarrhea (12), cough (16), headache (11), obstipation (5), sore throat (5), encephalopathy (11), typhoid tongue (1), hepatomegaly (2), and splenomegaly (1).
Conclusion Clinical feature of children with typhoid fever in Soetomo Hospital were nausea, vomiting, meteorism, diarrhea, cough, headache, obstipation, sore throat, encephalopathy, typhoid tongue, hepatomegaly, and splenomegaly.

Keywords: typhoid fever, Salmonella, clinical manifestation

INF-PP-2-2-046

Clinical profiles of diphtheria in children

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Abstract

Background Diphtheria is endemic in many parts of the world. Aggressive immunization especially in Indonesia has been proven to decrease diphtheria cases. But now diphtheria is labeled as reemerging disease since there was an outbreak of diphtheria in East Java on 2011-2012.
Objective To describe the clinical profile and outcome of diphtheria patients in Cipto Mangunkusumo Hospital from 2006-2012.
Methods A retrospective study was performed from medical record of diphtheria cases in Cipto Mangunkusumo Hospital from 2006-2012.
Results This study includes 16 patients with clinical diagnosis of diphtheria. Median age was 5.5 (range 3-11) years. Clinical symptoms at admission were fever (93.75%) (mean 5.6 (SD 2.5) days), bullneck (43.8%), cough (56.3%), difficulty of swallowing (75%), upper airway obstruction (37.5%), pseudomembrane in pharynx (75%) and tonsil (62.5%). Fifty percent cases did not receive DTP at all. Two of 8 patients received booster immunization. Mean leucocyte at admission was 14392.6 (SD 4138.2) u/L. Six patients were confirmed by culture of *C. diphtheriae*. All patients were given procaine penicillin (mean duration 9 (SD 4.4) days) and anti-diphtheria serum (ATS) (median dose 80.000 (range 40.000-100.000) IU). Myocarditis was occurred in one patient. Three patients have undergone tracheostomy. Pseudomembrane disappeared at mean 5 (SD 2.5) days. One patient died due to airway obstruction. Mean length of stay was 10.8 (SD 7.3) days.
Conclusion Prognosis of diphtheria cases is good with early diagnosis and prompts treatment, although half of cases did not receive complete DTP immunization. Immunization of DTP still remains the best preventive measure.

Keywords: Diphtheria, DTP

CLINICAL PROFILE OF CHILDREN WITH TYPHOID FEVER IN SOETOMO HOSPITAL

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BACKGROUND

Typhoid fever remains a problem in most developing countries, including Indonesia. Clinical manifestations of children with typhoid fever are various, classically characterized by fever and abdominal symptoms. A previous study (1999) in Soetomo Hospital showed 100% children with typhoid had fever, along with common signs and symptoms as hepatomegaly (78%), anorexia (71%), meteorism (59%), abdominal pain (37%), vomiting (40%), constipation (44%), diarrhea (22%), delirium (13%) and splenomegaly (9%).

OBJECTIVE

To describe the presenting signs and symptoms of typhoid fever in children admitted in Soetomo Hospital, Surabaya.

METHOD

This was a cross sectional medical record based study comprising patients during 2010-2012. Children were diagnosed as typhoid fever based on clinical presentations and positive IgM Salmonella (tubex). We looked for age of patients, cough, nausea, headache, sore throat, vomiting, constipation, diarrhea, typhoid tongue, encephalopathy, hepatomegaly, and splenomegaly.

RESULT:

There were 31 cases in this study with the median age of 9 years (2-16 years). Fever occurred in all patients. Other sign and symptoms were nausea (25), vomiting (24), meteorism (21), diarrhea (12), cough (16), headache (11), obstipation (5), sore throat (5), encephalopathy (11), typhoid tongue (1), hepatomegaly (2), and splenomegaly (1).

CONCLUSION:

Clinical feature of children with typhoid fever in Soetomo Hospital were nausea, vomiting, meteorism, diarrhea, cough, headache, obstipation, sore throat, encephalopathy, typhoid tongue, hepatomegaly, and splenomegaly.

INTRODUCTION

Typhoid fever is systemic infection caused by *Salmonella enterica* including serotype Typhi (*S.typhi*) and serotype Paratyphi (*S.paratyphi*) and being transmissible by faeco-oral route. High fever, toxemia, encephalopathy, coated tongue, alteration of bowel habits varying from constipations to diarrhoea, tender abdomen, hepatomegaly and splenomegaly are typical manifestation of the disease, and perforation during third week of fever often present.¹ Typhoid fever remains a problem in most developing countries, including Indonesia.

Typhoid is potentially life threatening illness, cause challenging problem in treatment. Reports from developing countries show that the clinical presentation, diagnosis and treatment of typhoid fever have significantly altered often leading to missed diagnosis. Clinical manifestations of children with typhoid fever are various.² A previous study (1999) in Soetomo Hospital showed 100% children with typhoid had fever, along with common signs and symptoms as hepatomegaly (78%), anorexia (71%), meteorism (59%), abdominal pain (37%), vomiting (40%), constipation (44%), diarrhea (22%), delirium (13%) and splenomegaly (9%).

The consequence of missed diagnosis is immense in terms of burden of limited health resources and patients suffering. Therefore its clinical spectrum requires constant reappraisal to update our physicians with current knowledge about pattern of typhoid fever.

METHOD

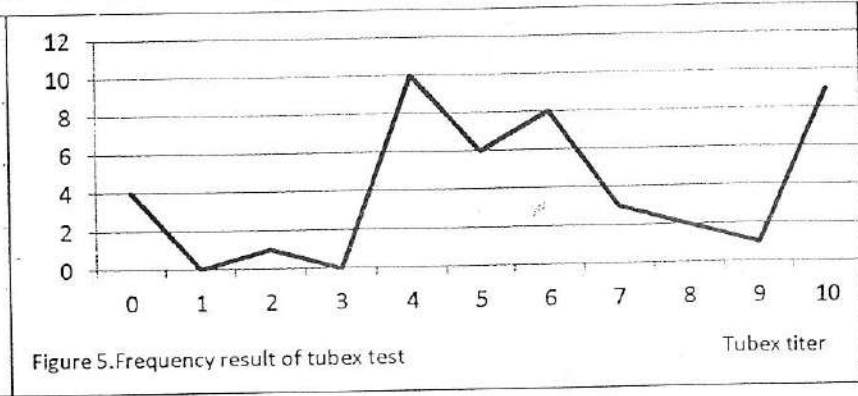
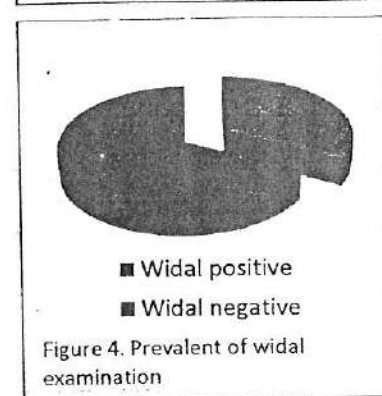
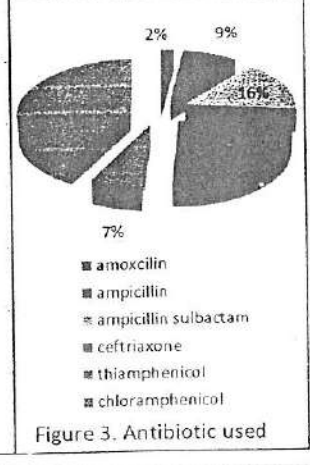
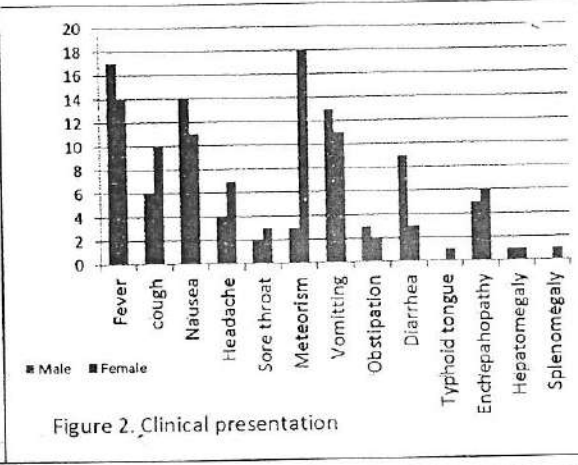
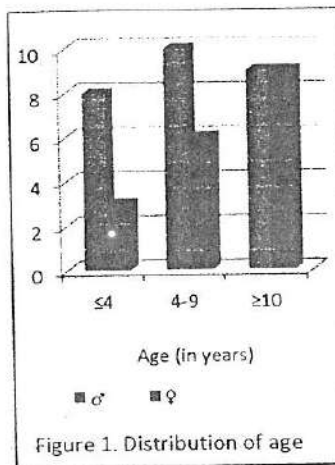
This was a retrospective study, evaluated children who diagnosed with typhoid fever, during 2010-2012. Diagnosis of criteria were clinical presentation and positive IgM salmonella with Tubex (≥ 4). Data of patients who admitted to paediatric ward, was obtained from medical records including age at diagnosis, sex, clinical symptoms, and laboratory profile. Clinical symptoms were recorded, such as cough, nausea, headache, sore throat, vomiting, constipation, diarrhea, typhoid tongue, encephalopathy, hepatomegaly, and splenomegaly.

RESULT

There were 45 patient who who had clinical features strongly suggestive of enteric fever but not supported with result positive for IgM *Salmonella* tubex, 14 subject had negative result of titer tubex so exclude from this study. Only 31 cases enrolled in this study, whose had tubex test greater or equals to 4. The median age was 9 year (2-16 year) with male more predominance from female (54.8%). Typhoid fever was presented in 25.8% children less than 5 year old (8/31). (Figure 1). The days of illness when admitted was varied with the modus day was the sixth day

of fever (range 3-16 days). The average length of stay in the hospital was 8.6 days with range 5-16 days.

Fever occurred in all patients. Majority sign and symptom in this were gastrointestinal abnormality, like nausea and vomiting (25;24 respectively). Figure 2 showed other sign and symptoms of patients, there were meteorism (21), diarrhea (12), cough (16), headache (11), obstipation (5), sore throat (5), encephalopathy (11), typhoid tongue (1), hepatomegaly (2), and splenomegaly (1). The widal test only performed in 67% patient, with positive result for serotype-O only in 5 children.(Figure 4)



Laboratory examination revealed 22.5% children had leukopenia with WBC less than 6,000/mm³, and 19.4% had leukocytosis with WBC ≥ 11,000/mm³. Anemia was presented in 70.9% (22/31) who had hemoglobin level less than 12g/dL. Elevated serum alanine was found in 30% of our patients and aspartate aminotransferase in 16% (50 > IU/L). The first antibiotic choiced was made based on clinical presentation when patient admitted. Choramphenicol was the most common antibiotic used in this study (42%).(Figure 3)

DISCUSSION

Recent reports from developing countries show that the clinical presentation, diagnosis and treatment of typhoid have significantly altered often leading to missed diagnosis. The incidence of complications is also reported to be variable.^{2,3} Therefore, its clinical spectrum requires constant reappraisal to update our physicians with current knowledge. This study was carried out to determine the clinical presentation of typhoid fever in children hospitalized due to typhoid fever.

In surveillance study reported before, the average age of children with typhoid fever was 10.2 years in Indonesia, but in this study we found the average age was 7.7 years.² Typhoid fever below five years of age is uncommon and these cases have more complications like Alam, 2010 had reported.⁴ In this study we found 37.5% child less than 5 years old with typhoid fever with modus ages was 4 years old, similar with study by Misra, 1996 from United States, 35% patient with typhoid fever were aged 0-5 years. Reported from WHO bulletin 2008 prevalent of typhoid fever in Indonesia (Jakarta) below 5 year old was 10.7%.^{2,5}

Islam et al, 2011 reported male was 54.5% from all subject with mean age 5.9 ± 3.0 years, with range 1-12 years.⁶ Fever was occurred in all patient with average day before admission was 8.46 days and average day of hospitalization was 8.6 days, it was shorter than report from Malik et al (Malaysia) with average duration of illness before admission was 11.5 days and duration of hospitalization was 16.6 days.⁷

In this study 22.5% children had leukopenia and 19.4% had leukocytosis, similar to other studies.⁸ Anemia was presented in 70.9%, it is different from Islam, et al reported than anemia presented in nearly half 48%.⁶ Elevated serum alanine and aspartate aminotransferase were 30% and 16% respectively, similar with Yaramis et al, 2001 reported from Turkey.⁹

Clinical presentation of typhoid fever in this study was similar with previous report in 1999, with the most commons were gastrointestinal problem. Hepatomegaly was found almost in 78% patient in previous reported, but in this study we just found only in two patient. The weakness of this study was examination not only performed by same physician but only based on medical record.

The most common antibiotic used in this study was chloramphenicol. Yaramis, 2001 reported from 67 blood culture isolates in their study, they found antimicrobial resistance rate were ampicillin (17%), trimethoprim-sulfamethoxazole (5%), ceftriaxone (4%), sulbactam-ampicillin (6%) but no resistance to quinolones and chloramphenicol.⁹ In this study 38% of patients got second line of antibiotics based on blood cultures.

In conclusion, typhoid fever occur in children of age more than 5 years old, while gastrointestinal manifestations was predominance to occur in children. Presentation in this study show a similar characteristics and clinical profile with most of other study.

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Clinical profiles of diphtheria in children

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Methods A retrospective study was performed from medical record of diphtheria cases in Cipto Mangunkusumo Hospital from 2006-2012.

Results This study includes 16 patients with clinical diagnosis of diphtheria. Median age was 5.5 (range 3-11) years. Clinical symptoms at admission were fever (93.75%) (mean 5.6 (SD 2.3) days), bullneck (43.8%), cough (56.3%), difficulty of swallowing (75%), upper airway obstruction (37.5%), pseudomembrane in pharynx (75%) and tonsil (62.5%). Fifty percent cases did not receive DTP at all. Two of 8 patients received booster immunization. Mean leucocyte at admission was 14392.6 (SD 4138.2) u/L. Six patients were confirmed by culture of *C. diphtheriae*. All patients were given procaine penicillin (mean duration 9 (SD 4.4) days) and anti-diphtheria serum (ADS) (median dose 80.000 (range 40.000-100.000) IU). Myocarditis was occurred in one patient. Three patients have undergone tracheostomy. Pseudomembrane disappeared at mean 5 (SD 2.5) days. One patient died due to airway obstruction. Mean length of stay was 10.8 (SD 7.3) days.

Conclusion Prognosis of diphtheria cases is good with early diagnosis and prompts treatment, although half of cases did not receive complete DTP immunization. Immunization of DTP still remains the best preventive measure.

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