ORIGINAL ARTICLE

Frequency of Thrombocytopenia in Children with Enteric Fever at PAF Hospital Sargodha

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ABSTRACT

Aim: To determine the frequency of thrombocytopenia in children presenting with enteric fever.
Methods: A total of 200 children of age 1-12 years with diagnosis of enteric fever in PAF hospital Sargodha were included. A study duration was 2 years from Oct-2018 to April-2020. The children having blood culture positives for growth of Salmonella-gram negative rod in Bactec system, presenting with fever ≥ 5 days were included. Children having platelet counts (as measured on auto-analyzer) <150000/µL were labelled as having thrombocytopenia.
Results: Mean age of the patients included in this study was 6.79±3.02 years. There were 116 (58%) male patients and 84 (42%) female patients. There were 134 (67%) children who were resident of rural area and 66(33%) resident of urban area. Mean platelet count was 150200±52435 µL.Thrombocytopenia was diagnosed in 127 (63.50%) children of enteric fever.
Conclusion: Thrombocytopenia is a common finding in children presenting with thrombocytopenia. In present study, thrombocytopenia was found in 63.5% patients.
Keywords: Enteric fever, Thrombocytopenia.

INTRODUCTION

Enteric fever is associated with considerable severe systemic sickness and severe abdominal pain.[1] It is typically caused by *Salmonella enterica* serotype *Typhi* (formerly S. typhi), the disease is usually transmitted through feco-oral route[2,3]. It is estimated that nearly 21 million cases are reported every year and out of which 21,6500 deaths are annually due to enteric fever[4,5]. Morbidity is high in Asia and Africa.[6,7] Mortality is high in children because of lower immunity and higher risk of exposure to fecal contents. Mortality rate can reach up-to 10% if appropriate antibiotics are not given, with appropriate treatment reported mortality rate is ≤1%.[8,9]

Thrombocytopenia is reported in up-to 10% to 15% cases of enteric fever.[10] Some studies have reported that is can serve as a marker of severity in these patients and can help to identify the patients at risk of developing the complications enteric fever. Presence of thrombocytopenia is these patients is thought to be result of bone marrow suppression, peripheral destruction of reticuloendothelial system, immune-induced destruction, and destruction due to toxins of *S. typhi*[11].

The present study is designed to determine the frequency of thrombocytopenia in children of enteric fever. This study helped us to confirm current magnitude of the problem in our local population becausethrombocytopenia is an indicator of severity and increased risk of complications of enteric fever. Moreover, it can be easily detected by relatively simple and cheap test.

METHODS

A total of 200 children of age 1-12 years with diagnosis of enteric fever in PAF hospital Sargodha were included. A study duration was 2 years from Oct-2018 to April-2020. The children having blood culture positives for growth of Salmonella-gram negative rod in Bactec system, presenting with fever ≥ 5 days plus any one of the followings such as abdominal pain, coated tongue, constipation for 3 days, diarrhea, anorexia and headache were included. Children with congenital or acquired immunodeficiency were excluded. A written consent was taken from parents of each children.

Venous blood samples were drawn in EDTA bottle and blood culture vial and these were immediately transported to Central laboratory for determination of platelet count. Children having platelet counts (as measured on auto-analyzer) <150000/µL were labelled as having thrombocytopenia.

RESULTS

Mean age of the patients included in this study was 6.79±3.02 years. There were 116 (58.0%) male patients and 84(42%) female patients. There were 134 (67%) children who were resident of rural area and 66 (33%) resident of urban area. There were 15 (7.5%) patients who were using unimproved water, 69 (34.5%) improved water such as from water treatment plants or were having filter at home, and remaining 116(58%) patients were using water directly coming from pipelines. Mean platelet count was 150200±52435µL (Table 1). Thrombocytopenia was diagnosed in 127 (63.50%) children of enteric fever (Fig. 1).

Table 1: Data of Baseline Study Variables.

Mean Age	6.79±3.02
Male	116 (58.0%)
Female	84 (42.0%)
Rural	134 (67.0%)
Urban	66 (33.0%)
Drinking Water Source	
Unimproved drinking water	15 (7.5%)
Improved drinking water	69 (34.5%)
Piped water on premises	116 (58.0%)
Mean Platelet Count (µL)	150200±52435

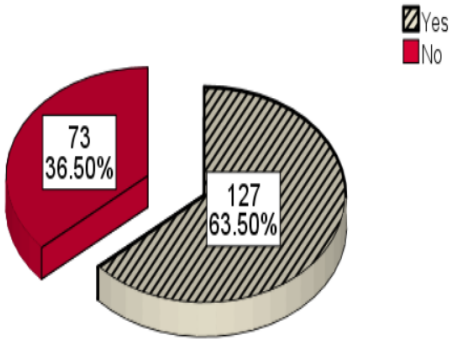

Fig. 1: Frequency of Thrombocytopenia.

DISCUSSION

Enteric fever is a public health problem and usually occurs among travelers. Factors that contribute to the severity of illness include; duration of illness, patient's immune status and previous vaccination of enteric fever. 88 the complications of enteric fever include; intestinal perforation, intra-cranial hemorrhage and multi-organ failure[12,13]. Thrombocytopenia is a commonly done investigation in patients presenting with fever[14].

In present study, we determined the frequency of thrombocytopenia in children presenting with typhoid fever. In our study, thrombocytopenia was found in 61.46% children of typhoid fever.

A study by Malik et al. from Malaysia reported thrombocytopenia in 26% children with diagnosis of enteric fever.[15] While a study by Pohan et al. from Indonesia reported thrombocytopenia in 61.5% of the children[16]. And a study by Iftikhar et al. conducted in Pakistan reported thrombocytopenia in 65% patients of enteric fever.[17] The reason for higher frequency in Pakistani population may be due to late presentation of patients to the specialized hospitals.

Still guidelines are lacking in providing the appropriate treatment of thrombocytopenia in patients of enteric fever. Therefore, it is a major challenge for the physicians specially in patients having severe thrombocytopenia. However, studies have reported that platelet count becomes normal within few days after starting the treatment[18,19]. Yildirim et al. reported a case reported in which the platelet count deteriorated even after starting the antibiotic therapy and multi-organ failure occurred and ultimately platelet transfusion was done to save the life of patients[12].

In short, thrombocytopenia is an important marker in children presenting with typhoid fever especially in those having severe symptoms. So platelet count should be monitored in patients of enteric fever. Because severe thrombocytopenia can lead to multi-organ failure and can considerably lead to increased morbidity and mortality.

CONCLUSION

Thrombocytopenia is a common finding in children presenting with thrombocytopenia. In present study, thrombocytopenia was found in 63.5% patients.

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