

ABSTRACT

CHILDREN WITH BICYTOPENIA AND PANCYTOPENIA- CLINICAL, ETIOLOGICAL SPECTRUM, OUTCOME AND FOLLOW UP IN A TERTIARY CARE CENTRE

BACKGROUND:

The etiology of bicytopenia and pancytopenia varies widely in children, ranging from bone marrow suppression by a viral infection to infiltration of marrow by malignant cells. There is also a considerable overlap between the causes of bicytopenia and pancytopenia. Identification of etiology and underlying pathology is essential, as it determines the treatment and outcome in these patients.

AIM AND OBJECTIVES:

The primary aim is to study the clinical, etiological spectrum of children with bicytopenia and pancytopenia admitted in pediatrics ward, Government Rajaji hospital, Madurai. The other objectives are to follow up the children with bicytopenia and pancytopenia for 18 months and assess the outcome and prognosis in children.

MATERIALS AND METHODS:

A hospital based prospective study of 18 months duration was, which included children between 2months-12 years of age admitted in our hospital with the presence of any two/all three of the following, hemoglobin <10gm%, total leukocyte count < 4000/mm³ and platelet count < 1 lac/mm³. After getting

informed written consent from the parent or guardian, detailed history, clinical examination and hematological parameters at presentation were recorded. All bicytopenia and pancytopenia cases were followed up for 18 months and outcome assessed.

RESULTS & DISCUSSION:

Out of the 300 children included in the study, 264(88%) had bicytopenia and 36 (12%) had pancytopenia. There is slight male predominance (58%) in children with bicytopenia and pancytopenia. Bicytopenia was common in age group 7-12 years (54%), pancytopenia in age group 1-6 years (61%). Commonest type of bicytopenia was leucopenia and thrombocytopenia seen in 175(66%) cases which was commonly caused by infections (100%). The second common form of bicytopenia was anemia and thrombocytopenia seen in 84(32%) cases which was commonly caused by malignancy (75%). The main presenting symptom in children with bicytopenia and pancytopenia was fever. Most common etiology was Dengue viral fever (61%) and acute lymphoblastic leukemia (19%) in bicytopenia. Most common etiology was septicemia (36%) and non malignant non infectious etiology (17%) like aplastic anemia in pancytopenia. Children with bicytopenia had a higher incidence of circulating blasts (20% vs 11%) and malignancy (23% vs 11%) and lower incidence of bleeding manifestation (28% vs 9.7%) as compared to the children with pancytopenia. In outcome, recovery rate was more with bicytopenia (67%) and death was more common in pancytopenia (33%). Shock, sepsis, and

disseminated intravascular coagulation were the common cause of death in children with bicytopenia and pancytopenia in our study. On follow up two undiagnosed pancytopenia cases were turned out to be acute leukemia, one undiagnosed case turned out to be aplastic anemia.

CONCLUSION:

Although bicytopenia and pancytopenia look ominous, this study showed the common causes were infections like dengue fever and septicemia, so high index of suspicion was necessary for early diagnosis, as most of the causes were treatable and curable. In our study we found that septicemia children who presented with bicytopenia or pancytopenia were associated with poor outcomes. At the same time all unexplained bicytopenia and pancytopenia should be followed up meticulously, as it may turn out to be malignancy at a later date.

KEY WORDS: Bicytopenia, pancytopenia, infections, malignancy.