

Public Health Congress 2018: Pneumonia in severely malnourished children: Etiology, diagnosis, management and future - Mohammad Jobayer Chisti - International Centre for Diarrhoeal Disease Research

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Objectives:

Statement of the Problem: Management of pneumonia in severely malnourished children is critically important in reducing deaths in such children. Understand the etiology of pneumonia in severely malnourished children is one of the essential components of appropriate management. Diagnosis of pneumonia in children with severe malnutrition is also intriguing. Etiology and diagnosis of pneumonia in SAM is not well described in medical literature. Data on management of pneumonia in such children are also lack. Methodology & Theoretical Orientation: We have done a systematic review using specific search criteria in PUBMED to evaluate the overall role of severe malnutrition in children with pneumonia in SAM children. Result: Among a total of 215 isolates, 26% were Klebsiella and 25% Staphylococcus aureus species; 18% Pneumococcus; 8% each Escherichia coli and Salmonella species. A recent study conducted in Bangladesh found 87/385 (23%) MTB as the bacterial etiology of pneumonia in SAM children. In SAM children, the sensitivity of fast breathing as a predictor of radiographically proven pneumonia ranged from 14% to 76% and specificity from 66% to 100%. Surprisingly, metabolic acidosis found to have no impact on the diagnostic clinical features of pneumonia in SAM children having diarrhea. Studies revealed that as a first line therapy ampicillin and gentamicin are more effective against enteric Gram-negative bacilli than chloramphenicol in SAM children with pneumonia. Both the groups received in addition to diet, micronutrients, vitamins and minerals. Conclusions & Significance: Currently, available data suggests that the spectrum and frequency of causative agents of pneumonia in severely malnourished children differ from that observed in well-nourished children. Clinical signs are relatively poor predictors of pneumonia in severely malnourished children. However, injectable antibiotics in addition to diet, micronutrients, vitamins and minerals are the sine qua non. High prevalence of pulmonary tuberculosis in severely malnourished children having acute pneumonia underscores the importance of further

research that may help to evaluate determinates of TB in such children.

Methods: Systematic search of the existing literature using a variety of databases (Medline, EMBASE, the Web of Science, Scopus and CINAHL).

Results: Mortality risk: Sixteen relevant studies were identified, which universally showed that children with pneumonia and moderate or severe malnutrition are at higher risk of death. For severe malnutrition, reported relative risks ranged from 2.9 to 121.2; odds ratios ranged from 2.5 to 15.1. For moderate malnutrition, relative risks ranged from 1.2 to 36.5. Aetiology: Eleven studies evaluated the aetiology of pneumonia in severely malnourished children. Commonly isolated bacterial pathogens were Klebsiella pneumoniae, Staphylococcus aureus, Streptococcus pneumoniae, Escherichia coli, and Haemophilus influenzae. The spectrum and frequency of organisms differed from those reported in children without severe malnutrition. There are very few data on the role of respiratory viruses and tuberculosis. Clinical signs: Four studies investigating the validity of clinical signs showed that WHO-recommended clinical signs were less sensitive as predictors of radiographic pneumonia in severely malnourished children.

Conclusions: Pneumonia and malnutrition are two of the biggest killers in childhood. Guidelines for the care of children with pneumonia and malnutrition need to take into account this strong and often lethal association if they are to contribute to the UN Millennium Development Goal 4, aiming for substantial reductions in childhood mortality. Additional data regarding the optimal diagnostic approach to and management of pneumonia and malnutrition are required from regions where death from these two diseases is common.

Biography

Mohammad Jobayer Chisti has been working in International Centre for Diarrhoeal Disease Research,

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