Optimal use of clinical signs for diagnosis and prognosis of childhood pneumonia

Background /Rationale

The WHO ARI algorithm developed in the 1980s recognised pneumonia based on two simple clinical signs: fast breathing and lower chest in-drawing. At that time pneumonia mortality was over 4 million per year in under five year old children and most of deaths were occurring in low resource settings thought to be mostly bacterial. Now the pneumonia deaths have reduced to around 900,000 per year due to increase in vaccination coverage like pneumococcal and Hib. There is a concern that majority of children who suffer from pneumonia now may not have bacterial pneumonia, which needs antibiotics. Antimicrobial resistance is increasingly becoming a very big public health issue. Work is being carried out to improve the diagnosis and prognosis for children with pneumonia, reduce unnecessary adverse health outcomes resulting from misdiagnosis and unnecessary referrals and reduce pressure on antimicrobial resistance.

Study Questions & Design

There has been a growing body of evidence suggesting that additional clinical features such as fever, or modifications to fast breathing cut-offs at different ages might substantially improve the validity of clinical algorithms, in turn improve the quality of care for children with pneumonia, and reduce unnecessary adverse health outcomes resulting from misdiagnosis. These improvements also have the potential to reduce overtreatment of 'false positives' cases and reduce this burden on already strained health systems. WHO collated data from 41 different pneumonia studies with includes data on a total of 138,350 pneumonia episodes and 4172 pneumonia deaths in young children. This data was analysed to assist in identifying areas where pneumonia diagnosis could be improved. MCA/WHO established a WHO Pneumonia Algorithm Development Group, which reviewed and recommended some potential revisions in the current pneumonia management algorithm. A new pneumonia algorithm will be field tested in at least 4 geographical settings in Africa and Asia.

Programmatic Implications

This project aims to develop more specific criteria for diagnosis and prognostic indicators for pneumonia in under 5 year old children. This will lead to a revised algorithm, which will help improve management of pneumonia in children in low- and middle-income countries.

Locations & Collaborators

Global.

Data Collection

May 2014 – December 2019

Funders

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Web

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