EDCTP

This project is part of the EDCT2 Programme supported by the European Union

COAST nutrition

Nutritional support in children recovering from severe pneumonia

Severe pneumonia remains the leading cause of illness and hospital admission in children in Africa. Outcomes remain poor including death and hospital readmission in the six months following hospital discharge. Metabolic requirements are high during severe pneumonia which results in breakdown of vital tissues (especially muscle) to release additional nutrients to these demands. We proposed that the excess post-discharge mortality associated with pneumonia may relate to the catabolic response and muscle wasting induced by severe infection and inadequacy of the diet to aid recovery.

Early nutritional support is commonly practiced including in patients with severe pneumonia worldwide, however, currently there are no recommendations for nutritional support for African children with severe pneumonia. We therefore conducted a clinical trial in 846 children hospitalised with severe pneumonia in Uganda and Kenya testing whether their usual diet supplemented with ready-to-use feed (RUTF), an existing nutrition feed developed for the treatment of malnutrition, given for 56 days compared to children who only had their usual diet improves outcomes.

We found no benefit of addition of diet supplemented with RUTF nutritional paste in children aged 6 months to 12 years on the composite endpoint of increased mid-upper arm circumference (a measure of muscle mass) or death at Day 90. Other than a marginal increase in skin fold thickness at Day 28 in the interventional arm we found no benefits on any anthropometric outcome measure. We found an increase in adverse events to Day 180 (death and readmission) in the intervention arm but these were not significantly greater than in the control arm so there may have been a chance finding.

We suggest that future trials of nutritional support following pneumonia should aim to focus on the high risk undernourished group and using a feed designed to target the metabolic needs of children with severe infection to optimise outcomes.

This project is part of the EDCTP2 programme (grant number RIA-2016S-1636-COAST-Nutrition) supported by the European Union, and UK Joint Global Health Trials scheme: Medical Research Council, Department for International Development, Wellcome Trust (grant number MR/L004364/1, UK).

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Note to the Editor

The **Kenya Medical Research Institute (KEMRI)-Wellcome Trust Research Programme** is a partnership between KEMRI, Oxford University and the Wellcome Trust. We conduct basic, epidemiological, and clinical research in parallel, with results feeding directly into local and international health policy and aims to expand the country's capacity to conduct

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