Do children with uncomplicated severe acute malnutrition need antibiotics?

Summary of review

Location: Multi-country review

What we know already: Current WHO guidelines recommend routine antibiotics for all children with severe acute malnutrition (SAM).

What this article adds: The evidence underlying current WHO antibiotic recommendations for uncomplicated SAM is weak. Randomised controlled trials are necessary including in HIV-negative, low prevalence settings.

Current (1999) World Health Organisation guidelines recommend giving routine antibiotics for all children with severe acute malnutrition (SAM), even if they have uncomplicated disease with no clinically obvious infections. The evidence behind this recommendation was recently reviewed by a team of researchers.

OVID-MEDLINE, EMBASE, COCHRANE, GLOBALHEALTH, CINAHL, POPLINE, AFRICA-WIDE-NiPAD, and LILACS were searched for antibiotics efficacy, bacterial resistance, and infection rates in SAM. Following PRISMA guidelines, a systematic review and meta-analysis were performed. Three randomised controlled trials (RCT), five Cochrane reviews, and 37 observational studies were identified.

One cohort-study showed no increase in nutritional-cure and mortality in uncomplicated SAM where no antibiotics were used (p = 0.05). However, an unpublished RCT in this setting did show mortality benefits. Another RCT did not show superiority of ceftriaxone over amoxicillin for these same outcomes, but addressed SAM children with and without complications (p = 0.27). Another RCT showed no difference between amoxicillin and cotrimoxazole efficacies for pneumonia in underweight, but not SAM.

The meta-analysis of 12 pooled susceptibility-studies for all types of bacterial isolates, including 2767 strictly SAM children, favoured amoxicillin over cotrimoxazole for susceptibility medians: 42% (IQR 27–55%) vs 22% (IQR 17–23%) and population-weighted-means 52.9% (range 23–57%) vs 35.4% (range 6.7–42%). Susceptibilities to second-line antibiotics were better, above 80%. Prevalence of serious infections in SAM, pooled from 24 studies, ranged from 17% to 35.2%. No study inferred any association of infection prevalence with antibiotics regimens in SAM.

The authors concluded that the evidence underlying current antibiotic recommendations for uncomplicated SAM is weak. Susceptibility studies favour amoxicillin over cotrimoxazole. However, given that these antibiotics have side-effects, costs, and risks as well as benefits, their routine use needs urgent testing. With reliable monitoring, it was concluded that there is sufficient basis for placebo controlled RCTs, the only robust way to demonstrate true efficacy. Future trials should evaluate antibiotics in uncomplicated SAM in HIV negative children and in low-prevalence settings.
