Incidence of severe acute malnutrition after treatment: A prospective matched cohort study in Nigeria

Research snapshot[1]

Treatment programmes for severe acute malnutrition (SAM) tend to focus on initial recovery with limited evidence on post discharge outcomes such as relapse and the remaining risk to children discharged as cured from outpatient facilities (OTP). This paper examines the persistent and excess risk of SAM among children treated in a community-based management of acute malnutrition (CMAM) programme in northern Nigeria and identifies the factors associated with the risk of relapse.

Persistent risk was assessed by measuring the six-month incidence rate of relapse among children discharged as cured from OTPs and excess risk was assessed by comparing this rate of relapse with a six-month incidence rate of SAM in a cohort of matched community controls. A total of 553 OTP-cured children and 526 matched community control children were enrolled on the study conducted from September 2018 to May 2019 in five rural local government areas (LGAs) in Sokoto State. Each community control child was matched to an OTP-cured child based on residence, age, sex, age of mother and level of education. Both cohorts were followed-up with outcomes and covariates measured fortnightly in up to 12 home visits.

Throughout the study, 24% of OTP cured children experienced relapse, compared to 0.6% community control children who developed SAM. The relapse incidence rate in the OTP-cured cohort was 0.204 per 100-child days compared to 0.004 per 100 child-days in the community cohort, meaning that SAM incidence rates were 52 times higher in the OTP-cured cohort. Most relapse cases occurred within the first 60 days post OTP-discharge. When assessing risk factors of relapse, it was found that being female, having a lower length/height for age at admission, a lower mid-upper arm circumference (MUAC) at admission and a household head without stable employment throughout the year were all related to a higher likelihood of relapse.

The authors conclude that OTP-cured children remain at a significantly excess risk of SAM and follow-up care should be strengthened using key observable characteristics such as sex or MUAC at admission to identify high risk cases.

[1] Adegoke, O, Arif, S, Bahwere, P, *et al.*,(2020). Incidence of severe acute malnutrition after treatment: A prospective matched cohort study in Sokoto, Nigeria. Matern Child Nutr. 2021; 17:e13070. https://doi.org/10.1111/mcn.13070

INCAP Longitudinal Study: 50 Years of History and Legacy

Research snapshot[1]

The INCAP Longitudinal Study is the longest followed cohort study since birth in a developing country. It is made up of people who, from conception or before they turned seven years of age, participated in a nutritional supplementation intervention between 1969 and 1977 in four rural villages in Guatemala and who, in the last follow up (2015-2017), were between 42 and 57 years of age.

Two villages received a high-protein, high-energy supplement ('atole') and another set of matched villages received a non-protein, low-energy supplement ('fresco'). Both supplements contained the same amount of micronutrients. This community randomised nutrition intervention targeted pregnant and lactating women and their children from birth to seven years of age. In addition to the nutritional intervention, a health education programme and free primary healthcare were provided in all villages.

Since the study, seven follow-up investigations have been carried out, thus offering one of the richest sources of information in relation to the importance of nutrition for growth, development, wellbeing and human capital later in life. Reflecting on the findings over the last fifty years, a special supplement of the *Food and Nutrition Bulletin* aims to highlight the large body of evidence drawn from this cohort.

Articles in this supplement demonstrate an association between atole being given during the first 1,000 days and reductions in morbidity and improved physical growth in infancy and early childhood, as well as positive longer-term effects on anthropometry, skeletal maturation, physical work and intellectual development. Atole during the first 1,000 days was also associated with improvements in motor development and cognitive function during childhood and adolescence and adult cognitive skills and productivity. One follow up study noted the impact of atole on reducing the risk of diabetes but also on increasing the risk of overweight and obesity. Intergenerational effects were also found with impacts on the birth size, growth, body composition and wellbeing of the next generation.

The INCAP study has been instrumental in generating consensus on the importance of the first 1,000 day window with long-term impacts on human capital. The special supplement summarises the rich body of evidence to enable improved decision making, particularly in Latin America. Work to explore further findings within this cohort continues.

[1] Ramirez-Zea, M & Mazariegos, M. (2020). INCAP Longitudinal Study: 50 Years of History and Legacy. Food and Nutrition Bulletin 1-3, https://doi.org/10.1177/0379572120907756

Burden and determinants of wasting in Southeast Asia and the overlap with stunting

Research snapshot[1]

The largest proportion of wasted children globally is found in Southeast Asia, yet this is not fully recognised as a public health problem and the coverage of treatment services in the region remains low. This is partly due to the belief that wasting in Asian children has different determinants and clinical features than those observed in African children. This study aimed to understand wasting epidemiology in Southeast Asia and determine the burden of wasting, its predictors and the level of wasting and stunting concurrence.

The study conducted a secondary data analysis of the latest Demographic and Health Survey (DHS) and Multiple Indicator Cluster Surveys (MICS) or National Food and Nutrition Survey (NFNS) from Cambodia, Loa PDR, Myanmar, Thailand, Timor-Leste and Vietnam. Surveys were conducted between 2011 and 2017. The pooled weighted prevalence for wasting, severe wasting and concurrent wasting and stunting among children aged 0-59 months of age in the six countries was 8.9%, 2.9% and 1.6% respectively. In absolute numbers this translates to 1,088,747 children with wasting and 272, 563 children with concurrent wasting and stunting in the six countries. Wasting prevalence was 50% higher in the 0-23 months age group. Characteristics associated with wasting included source of drinking water, wealth index and child's age, size at birth and history of illness. Maternal body mass index (BMI) was also highly associated with wasting; however, there was no association between maternal age and maternal height and risk of child wasting. A surprising finding was the higher risk of wasting among children from urban households compared to those from rural households. Further investigation is needed to understand this finding. The authors conclude that wasting is a serious public health problem in Southeast Asia that needs to be urgently addressed through both preventative and curative approaches.

[1] Mutunga M, Frison S, Rava M, Bahwere P. (2020). The Forgotten Agenda of Wasting in Southeast Asia: Burden, Determinants and Overlap with Stunting: A Review of Nationally Representative Cross-Sectional Demographic and Health Surveys in Six Countries. Nutrients. 2020;12(2):559. Published 2020 Feb 20. doi:10.3390/nu12020559