

# Description of bilateral oedema cases among children hospitalized in Mali and the Democratic Republic of Congo

Jihane Ben-Farhat, Epicentre, France

## Introduction

In Sub-Saharan Africa bilateral oedema is usually associated with Kwashiorkor, a form of severe acute malnutrition (SAM), but the sign can also be indicative of other pathologies. We aimed to describe the children presenting with bilateral oedema, to better understand their evolution and the underlying cause.

## Methods

A prospective study conducted in Rutshuru, Democratic Republic of Congo (DRC) and Koutiala, Mali from October 2016 to December 2017 included children aged 6-59 months admitted with bilateral oedema. Clinical, anthropometric, biological, nutritional, and therapeutic characteristics and outcomes were collected. Description was done according to oedema severity and presence or absence of additional signs of SAM (MUAC<115 mm and/or W/H<-3Z-score).

## Results

A total of 1611 (488 - DRC; 1123 - Mali) children participated. Overall 98% were ≥12 months of age, 57% had additional signs of SAM while 16% and 49% presented 3+ oedema in DRC and Mali respectively. About half of the children tested were malaria-positive and 57% anaemic. Children with additional signs of SAM were significantly more anaemic ( $p<0.05$ ) in DRC and more likely to be hypotensive in both sites ( $p<0.01$ ). Proteinuria was detected in 45% and 8% in DRC and Mali respectively.

Fifty-six percent of Congolese and 91% of Malian children were discharged with no oedema within a median of 2 days [IQR:1-3] and 3 days [2-5] respectively. Seven percent of the children died while hospitalized, with 69% (DRC) and 61% (Mali) of deaths occurring in those with proteinuria and/or anaemia, and 78% and 69%, respectively, in the group with additional signs of SAM. Proteinuria at admission was associated with at least a threefold elevated mortality risk in DRC (aOR 3.0, 95% CI 1.2-7.6;  $p=0.02$ ) and in Mali (aOR 4.4, 95% CI 1.6-12.2;  $p=0.01$ ).

## Conclusion

This study shows differences in clinical and biological characteristics of children presenting with bilateral oedema, some of which are associated with mortality. Differences observed in the resolution of oedema would deserve additional investigations to identify underlying illnesses that could explain them.

Beyond Kwashiorkor: bilateral oedema among under 5 children hospitalized in DRC and Mali showed high variability in presentation and outcome.