Reviewer’s report

Title: Systemic bacteraemia in children presenting with pneumonia symptoms and the impact of non-typhoid salmonella (NTS)

Version: 1 Date: 21 May 2010

Reviewer: Stephen Graham

Reviewer’s report:

The data presented in this paper refer to an important and often under-recognised problem that in tropical Africa, NTS are a common blood isolate from children with WHO-defined clinical pneumonia.

The authors generally present the data clearly and do not try to over-interpret or analyse recognising limitations.

Title: suggest “clinical pneumonia” rather than “pneumonia symptoms” as classified by signs as well as symptoms.

Abstract:

Represents a cut and paste of results from text. Present important data more clearly and succinctly. For example, it is not clear from abstract whether the numbers of isolated pathogens are from all blood cultures or only from the subset that presented with pneumonia.

Text: important points that need to be addressed:

Methods and results:

Is Hib vaccine implemented in Ghana – in this population? Important to state.

What is background HIV prevalence in study population.

What were the indications for blood culture? Was there a prospectively defined criteria for blood culture or is this a retrospective report of blood culture results from those that the attending physician decided that blood culture was indicated?

The definition as described for clinical pneumonia is NOT exactly as per WHO. It appear that those with “pneumonia” in this study would refer to WHO both non-severe and severe, whereas those with “severe” (danger signs) in this study fit the criteria for “very severe”. This needs to be better defined. Any child with chest indrawing has severe – and needs different antibiotics and hospitalisation – while no chest indrawing and just fast breathing would be “non-severe” managed at home with oral antibiotics. This needs clarification as also relates to later discussion about antibiotic susceptibilities.

Are there any data about prior antibiotic usage? This affects blood culture yield
esp of more fastidious organisms such as Hib and pneumococcus so can skew “in favour” of more NTS.

NTS can also refer to Salmonellae (plural). What were the common serovars – s.typhimurium and S.enteritidis are the usual reported.

Are there any outcome data?

Discussion is too long for data presented here.

What do authors think of penicillin alone for severe pneumonia as still recommended by WHO in non-HIV endemic setting? This is the main challenge highlighted by NTS. Note that in vitro penicillin resistance in some pathogens (ie pneumococcus) does not necessarily mean that penicillin will not be effective in vivo.

Reference to data from India is using S typhi information – this should be clear. There are important regional differences in NTS: typhi prevalence and differences of resistance/virulence issues between Africa and elsewhere are referred to in work from Gordon MA et al Clin Infect Dis 2008, and Kingsley R et al Genome Research 2009.

There are studies that have also found that NTS are the other common isolate from blood in child pneumonia studies in the region even before implementation of Hib vaccine and these should be more carefully considered and referred to as they relate more directly to this work – rather than the long list of references. (refs 6-16). These include ref 11 (O’Demsey et al PIDJ 1994 – The Gambia) plus Graham SM et al Lancet 2000 - Malawi; Berkley JA et al BMJ 2006 - Kenya; Siguaque B et al J Trop Pediatr 2009 - Mozambique.

Level of interest: An article of importance in its field

Quality of written English: Needs some language corrections before being published

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:

I declare that I have no competing interests.