Commentary

Saving babies' lives by antenatal malaria prevention

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Invited commentary on 'Malaria prevention in pregnancy, birthweight, and neonatal mortality: a meta-analysis of 32 national cross-sectional datasets in Africa', Eisele et al., the Lancet Infectious Diseases, 2012.

Malaria in pregnancy is the single most important preventable cause of low birth weight (LBW) in sub-Saharan Africa, and contributes significantly to neonatal mortality. Intermittent preventive treatment in pregnancy (IPTp, the administration of two or more courses of antimalarials, usually SP, at scheduled antenatal care (ANC) visits), and insecticide-treated nets (ITNs) have both been shown to decrease this burden in Cochrane reviews. Although IPTp and ITNs are WHO policy, in 2007 an estimated 19 million and 23 million women in sub-Saharan Africa did not have access to IPTp and ITNs, respectively.¹

To understand the importance of this gap in programme implementation, Eisele and colleagues have analysed data from demographic health surveys and malaria indicator surveys to estimate the effectiveness of IPTp and ITNs in preventing LBW and neonatal mortality.² The study's key finding, after controlling for potential confounding factors, is that access to IPTp and/or ITN significantly decreased neonatal mortality (by 18%), and LBW (by 21%). The investigators primary interest was in the protection of the first two, most vulnerable, pregnancies, but in fact the observed protection extended approximately equally across all gravidities. For LBW, there was clear evidence of an added benefit of each intervention, whereas for neonatal mortality only SP had a clear benefit. Given that SP was associated with decreased neonatal mortality without marked malaria effects in a recent study,³ it is possible that it may decrease neonatal mortality by additional mechanisms, such as antibacterial activity, a finding that warrants further investigation.

Given the benefits observed, we must find better ways to reach pregnant women not currently protected against malaria. Over 80% of surveyed women attended ANC at least once, but over half had neither ITNs nor any IPTp, and only 10% had ITNs and at least two doses of IPTp. Barriers to implementation that must be overcome include funding for ITN distribution (free or through voucher schemes), procurement and distribution of SP to ANCs, adequate staff in-service training in malaria prevention, and ongoing education of ANC attendees. Several of these measures require close liaison between national Malaria Control and Reproductive Health Programmes, which has often been lacking.

SP resistance is an emerging problem, and one small study from Tanzania suggested SP might be deleterious in pregnancy.⁴ These observations were not confirmed in larger data sets from South Eastern Africa (nor are they supported by Eisele's findings), but the issue requires ongoing monitoring. Many of the surveys used by Eisele et al recorded only whether any IPTp was given,² but a recent meta-analysis suggests that three or more doses of SP IPTp are most efficacious against LBW.⁵ Eisele's study design precluded close analysis of the dose-effect of SP IPTp, but might a greater impact of IPTp on neonatal mortality be observed if IPTp were widely administered at monthly ANC visits in the second and third trimesters of pregnancy? This requires further study.

Whilst there are needs both for alternatives to SP for IPTp and for new insecticides to combat emerging mosquito resistance, immediate steps to increase pregnant women's access to effective interventions such as IPTp and ITNs can save the lives of tens of thousands of babies each year in sub-Saharan Africa.

References

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