PhD defence Paulo Arnaldo

Evaluation of intermittent preventive treatment during pregnancy (IPTp) in Chókwè district, SouthernMozambique: coverage and effect on pregnancy and parasitological outcomes

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Institute of Tropical Medicine - Antwerpen

Dit is de omschrijving

Supervisor:

- Prof. dr. Anna Rosanas-Urgell (ITM)
- Prof. dr. Luc Kestens (University of Antwerp)
- Dr. Sónia M. Enosse (Instituto Nacional de Saude, Mozambique)

Summary:

Malaria in pregnancy (MiP) is an important public health problem in Sub-Saharan Africa. It is known to be the most common and preventable cause of harmful outcomes to both mothers and developing foetuses in malaria-endemic areas. In stable transmission areas, MiP typically does not cause clinical symptoms and is usually not detected. This thesis aimed to evaluate the community coverage of IPTp-SP and factors potentially related to low IPTp-SP among women with non-institutional and institutional deliveries; investigate the factors associated with malaria infection and adverse pregnancy outcomes among pregnant women at delivery; explore the perceptions, views, experiences and behaviors of pregnant women and health workers on accessing IPTp-SP for malaria prevention in pregnancy and assess the frequency of dhfr/dhps mutations in P. falciparum isolates collected from pregnant women, analyze the association between mutant haplotypes with parasitological and pregnancy outcomes and, investigate the effect of IPTp-SP on the carriage of asexual and sexual stages.

We found that less than a half of the women reported taking the recommended ≥ 3 doses of SP during their last pregnancy. This coverage remained well below the national's target of 80% of pregnant women receiving ≥ 3 doses of IPTp-SP. This low IPTp-SP coverage was associated with non-institutional births, late first ANC visit, lower awareness about IPTp and the level of education attained by pregnant women. Pregnant women were not aware of the risks of MiP or the benefits of its prevention. Delays in accessing antenatal care, irregular attendance of visits, and insufficient time for proper antenatal care counselling by health workers may explain inadequate IPTp delivery.

We detected a prevalence of 16.8% of maternal malaria infections at delivery, 7.7%, 20.8% and 1.1% of low birth weight, preterm delivery and stillbirths, respectively. Maternal malaria infections were mainly asymptomatic and more likely to be acquired by young mothers living in rural areas. The prevalence of malaria infections did not differ significantly between women receiving < 3 and ≥ 3 SP doses. Low birth weight prevalence did not significantly differ between women receiving < 3 and those receiving ≥ 3 SP doses. However, babies born to women in their first pregnancy were at higher risk of being underweight at birth than those born from mothers with multiple pregnancies.

We report the persistence of quintuple mutated parasites in the study area, while we provided the first evidence of the occurrence of super-resistant P. falciparum parasites (carrying the sextuple mutant parasites), although not associated with adverse pregnancy outcomes. The study further shows an important burden of submicroscopic gametocyte carriers infected with mutant parasites, indicating that pregnant women could constitute a non-negligible human reservoir of malaria transmission.

Overall, these findings indicate that, in addition of a suboptimal IPTp-SP coverage in the study area, the emergence of highly-resistant parasites is a threat to IPTp-SP effectiveness for malaria prevention during pregnancy. Therefore, although efforts to improve the coverage of IPTp are important, alternatives to SP for IPTp, such as dihydroartemisinin-piperaquine should continue to be tested (specifically in the study area) and new interventions against MiP (e.g. community delivery of IPTp or screening and treatment of pregnant women) should be explored in Mozambique.

Reception from 6 pm:

Please subscribe with an e-mail to Pieter Guetens before 5 December in the interest of organization of the reception.â€‹: pguetens@itg.beâ€‹.