Maternal and child health

PO - (8249) - SUBMICROSCOPIC PLASMODIUM FALCIPARUM INFECTIONS IN MATCHED PERIPHERAL, PLACENTAL AND UMBILICAL CORD BLOOD SAMPLES FROM CONGOLESE WOMEN AT DELIVERY.

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Background

The cross-sectional study was conducted in a Southern district of Brazzaville, the capital of the Republic of Congo, between March 2014 and April 2015. The present cross-sectional study was conducted to characterize P. falciparum infections matched in peripheral, placental and cord blood among Congolese women at delivery receiving 1, 2 or more doses of sulfadoxine-pyrimethamine.

Methods

Peripheral and placental blood samples were collected for P. falciparum infection investigation by microscopy and nested polymerase chain reaction (PCR), using P. falciparum merozoite surface protein-2 (msp2) gene as marker.

Results

Of the 370 pregnant women recruited, only 7.3% peripheral and 2.7% placental blood samples were found smear-positive for P. falciparum by microscopy. All isolates from cord blood were microscopy negative. However, the prevalence of submicroscopic P. falciparum infections (detectable only by PCR) were 25.4%, 16.7% and 9.4% in peripheral, placental and cord blood respectively. The frequency of 3D7 msp2 alleles was the highest (>60%) whatever the considered blood. We found a high prevalence of submicroscopic infection in pregnant women associated with a high genetic diversity of P. falciparum isolates. The MOI ranged between 1.2 and 1.4 irrespective of the blood compartment, and it showed no significant association with maternal age (p = 0.3), gravidity (p = 0.1) or sulfadoxine-pyrimethamine (p = 0.3).

Conclusion

In summary, this study showed that there is a high prevalence of submicroscopic infection and a high genetic diversity of Plasmodium falciparum strains in Congo. This diversity varies according to maternal, placental and umbilical cord blood. Age, gravidity and doses of preventive treatment based on sulfadoxine-pyrimethamine do not interfere with the multiplicity of infections.