PO 8289  ASSOCIATION BETWEEN PLASMA LEVELS OF IL-27, IL-6 CYTOKINES AND P. FALCIPARUM INFECTION IN PREGNANT WOMEN LIVING IN MBALMAYO, CAMEROON

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Background The appropriate balance between anti-inflammatory and pro-inflammatory cytokines is necessary for protection against pregnancy-associated malaria and poor pregnancy outcomes. This study therefore aims to investigate the relationship between plasma levels of some regulatory cytokines and P. falciparum infection in Cameroonian women during pregnancy.

Methods Peripheral blood was collected from 131 women during pregnancy and 27 non-pregnant women living in the Mbalmayo area between May and December 2014. Parasitaemia was determined by microscopy and haemoglobin level using a haematological counter. Plasma levels of IL-27 and IL-6 cytokines were measured using the Magnetic Luminex Screening Assay technique.

Results Parasitaemia associated negatively with haemoglobin level (r_s = -0.43; p < 0.001). The plasma level of IL-6 was higher in pregnant women than in non-pregnant women (p = 0.05). Regarding parasitaemia, plasma level of IL-27 was significantly higher in non-infected than in infected women (p = 0.028) while that of IL-6 was significantly higher in infected women (p < 0.0001). Moreover, parasitaemia correlated negatively with the plasma level of IL-27 (p = 0.034) and positively with that of IL-6 (p < 0.0001). In addition, level of IL-6 was significantly higher in anaemia-positive than in anaemia-negative women (p = 0.028). On the other hand, level of IL-27 negatively associated with the parity (p = 0.022) and gestation age (p = 0.014).

Conclusion These results show that in pregnant women, P. falciparum malaria infection is associated with high plasma level of IL-6 and low level of IL-27, suggesting that IL-27 could have a protective effect against pregnancy-associated malaria while IL-6 seem to be a potential biomarker of the disease.

PO 8290  INFLUENCE OF THE SICKLE CELL TRAIT ON PLASMODIUM FALCIPARUM TRANSMISSION IN ASYMPTOMATIC CHILDREN

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Background The sickle cell trait is associated with protection against severe malaria. Recently, it has been shown that the genetic protection conferred by the sickle cell trait has no effect on the transmission of Plasmodium species from humans to vectors. Our study aimed to investigate the putative association between the sickle cell trait AS and the susceptibility to malaria infection of both the human host and the insect vector.

Methods The study was conducted from June to November 2017 among asymptomatic children living in Cameroon. The samples were collected on microscopy slides, Whatman FTA and grade 17 paper for the selection of gametocyte carriers by microscopy, the molecular diagnosis of Plasmodium species, and sickle cell trait (PCR- RFLP), respectively. Infectivity of the mosquito was measured by experimental infections on gametocyte-containing blood from naturally infected carrier. Genetic diversity was measured using microsatellite markers.

Results A total of 1557 children were recruited; the prevalence of Plasmodium infection among this group was 58% and the AS sickle cell trait 20%. No significant difference in the prevalence of P. falciparum infection was observed according to the sickle cell trait carriage and this irrespective of the parasite stage (p > 0.05). The level of infectivity of the mosquito was higher when feedings were performed on blood from HbAS genotypes compared to HbAA genotype blood, and the difference was even more significant when the blood pellet was resuspended with non-immune AB plasma (p < 0.0001). No significant difference was observed in the infection complexity between HbAS and HbAA genotypes (p > 0.05).

Conclusion Plasmodium infection is not influenced by HbAS genotype regardless of parasite stage; the risk of anopheline infection is higher with blood from gametocyte carriers with sickle cell trait (HbAS). The sickle cell trait does not affect the multiplicity of infection.