Background and objective: In sub-Saharan Africa, malaria during pregnancy is a major health problem because it poses significant risks for the pregnant woman and the fetus. The sequestration of Plasmodium falciparum-infected erythrocytes in the placenta has consequences for the mother and the fetus. This study aimed to evaluate the allelic polymorphism of the Plasmodium falciparum MSP-2 gene related to the consequences of placental malaria.

Methods: It was a cross-sectional study conducted over two periods lasting six months in 2016 and 2017. The maternity center of the Hospital of Borgou-Alibori in Benin Republic served as a framework for the study. In 98 parturients included, placental blood samples were taken and then genotyped.

Results: using the MSP-2 gene as marker, the prevalence was 17.34%. The MSP-2 gene was polymorphic with 9 distinct allelic types for both 3D7 and FC27 families (150bp;200bp;250bp;275bp;300bp;350bp;400bp;450bp and 500bp). The FC27 allelic family was predominant over the 3D7 family with 56, 25% and 43, 75% respectively. The 300bp allelic type (50%) was predominant in the FC27 family while the 400bp type was predominant in 3D7 family (35, 71%). 9 woman had polyclonality (52,94%). The multiplicity of infection (MOI) was 1.88. The number of strains ranged 1 to 4 in infected women. In univariate analysis there was no significant relationship between MSP-2 gene polymorphism and maternofoetal consequences. The absence of prenatal consultation (p=0.0270), non-taking of IPTp/SP (p=0.0060), the occurrence of malaria in the third trimester (p=0.0364) and moderate maternal anemia (p=0.0277) were associated with the polymorphism of MSP-2 gene. The MOI was significantly associated with parasite density of infected women.

Conclusion: Plasmodium falciparum MSP-2 gene was polymorphic in infected women at Parakou. Several factor related to pregnancy monitoring were associated with this genetic diversity. It is therefore essential to ensure correct follow-up of women pregnancies.