## Fiacre Byiringiro Mugabe, MD

Year of Bursary: 2020

Pathologist at Rwanda Military Hospital - Kigali



Congenital malaria is detected within a neonate's first week of life and the diagnosis is made by detecting *Plasmodium* parasites in peripheral blood smear (PBS).

The topic of my project is entitled: **"Diagnosing congenital malaria in the Eastern province of Rwanda.** A Comparison of Infant Peripheral Blood Smear, Cord Blood Smear and Placental Histopathologic Examinations". Rwanda is among endemic zones of Malaria and as I have interest in infectious disease pathology, I found this topic suitable. This study has been conducted in two District Hospitals of the Eastern Province, Rwinkwavu and Kirehe.

The aim of the study was to compare the results of placenta histology to blood smears for diagnosis of congenital malaria and I was the principal investigator.

After getting the consent from the mothers, peripheral and cord blood smears (CBS) were sampled, from neonates whose mothers were positive (+) for malaria within the last 2 weeks of pregnancy for light microscopic exam. Thereafter, the placenta histology (PH) for detection of malaria parasites was done. Regression analysis was done and results were considered significant if *p*-value <0.05, 95%CI.

During the four months study period, 111 neonates were recruited. Eighty-six of them (77%) had at least one of the 3 tests positive. Fifty eight percent had CBS+, 56% had PH+ and 44% had PBS+. Of those with PBS+, 61.6% had CBS+, while 50% had PH+. Neither the PH nor CBS alone was significant predictor of a positive PBS. However, when both were positive, there was a 95.5% chance that the PBS will be positive (p-value: 0.000, RR: 18.8).

By the end of the study, I found that there is high prevalence of congenital malaria among neonates born from women with malaria during the last 2 weeks of pregnancy in Rwanda and it has been clearly shown that combined placenta histology and CBS can be used as reliable tests for early detection of congenital malaria.

I would have been so glad to physically meet more than 4500 participants from around the world in Glasgow for learning and experience sharing, unfortunately COVID-19 pandemic didn't allow. The virtual IAP/ESP meeting was a mega achievement by the organizing committee, to me, it was beyond my expectations. I really enjoyed the virtual meeting and learned much about what is currently done in pathology world. The infectious disease part was awesome.

Allow me to take this opportunity and extend my deepest acknowledgements to the BDIAP for the fellowship award that helped me making this project a memorable and a successful one. Special mention to Miss Sam Kiely, her support has been invaluable. And lastly, to those who in one way or another have contributed to make this project possible.

END