

6TH ANNUAL BACTERIOLOGY AND PARASITOLOGY MEETING

September 13-14, 2017 Singapore

Performance evaluation of malaria microscopists working at malaria slides rechecking laboratories for external quality assessment in Ethiopia

Abnet Abebe^{1,2}, Meseret Belayneh², Habtamu Asrat¹, Wondwossen Kassa¹, Andargachew Gashu¹, Adino Desale¹, Getnet Hailu¹, Tesfaye Mekonnen¹, Feven Girmachew¹, Achamyelch Mulugeta¹, Ebise Abose¹, Dereje Yenealem¹, Abeba G/Tsadiq¹, Gonfa Ayana¹ and Kassu Desta²

¹Ethiopian Public Health Institute, Ethiopia

²Addis Ababa University, Ethiopia

Background: Microscopic diagnosis of Giemsa stained thick and thin blood films by skilled microscopists has remained the standard laboratory method for the diagnosis of malaria. The performance of malaria microscopists in all health facilities have been raised concerns by many experts. Microscopists who are working at malaria rechecking laboratories have to be competent to cross check blood film slides which are collected from testing sites.

Objective: The current study aims to assess the performance of malaria microscopists who is working at malaria EQA rechecking laboratories in Ethiopia from February to May, 2015.

Methods: A cross-sectional study design was conducted to assess the performance of 107 malaria microscopists who are working at 23 malaria rechecking laboratories in Ethiopia. A set of 12 blood film slides containing known negative and positive (different species, stage, and parasite density) results were distributed to each malaria microscopists. Data was collected and entered into Microsoft Excel sheets and exported to software SPSS version 20 for analysis. Chi-square (for categorical data), sensitivity, specificity, percent agreement and kappa score were calculated to assess laboratory professionals' performance in detecting and identification of *Plasmodium* species using light microscopy. Association was taken as significant at $P < 0.05$.

Result: A total of 107 study participants were involved in this study, the mean age of the participants was 30 ± 5.04 years and most of them 54 (50.5%) were working at regional reference laboratories. Overall, the sensitivity of participants in detection and species identification of malaria parasites were 96.8% and 56.7%, respectively. The overall agreement on detection and identification of malaria species was 96.8% (Kappa=0.9) and 64.77% (kappa=0.33), respectively. About 34 (31.8%) participants were used unrecommended quantification (+) system. The least malaria species which were identified correctly by the participants were *P. malaria* (2.8%) followed by and *P. ovale* (32.7%). Participants at hospital laboratory had the highest percent agreement (72.3%, Kappa=0.51) on species identification. Malaria microscopists working at sub regional laboratory had a better quantification performance ($P=0.003$). Study participants who were participated on malaria microscopy and quality assurance training had a better performance on parasite quantification ($P < 0.001$).

Conclusion & Recommendation: Agreement of the participants with expert microscopists in the identification of different malaria species and quantification were very low. Most participants did not identify *P. malaria* and *P. ovale* correctly. Therefore, policy backed regular competency assessment and training for malaria microscopists is essential and mandatory that can assure proper diagnosis and management of malaria in Ethiopia.

Biography

Abnet Abebe has his expertise Evaluation of malaria. He belong to Ethiopian Public Health Institute, Ethiopia. His research work includes Microscopic diagnosis and evaluation of malaria.

abinetabas@yahoo.com

Notes: