

Abstract

Background: Presently, all malaria diagnostic methods like: Microscopy and Rapid Diagnostic Tests are invasive as they depend on blood samples for malaria diagnosis. Hence this study was aimed at comparing the diagnostic

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Citation: Awah NAC, Nchotu BR, Bongah AD, Assob NJC (2022) Comparative Evaluation of the Diagnostic Performance Characteristics of a One-Step Urine Malaria Test (UMT) against Rapid Diagnostic Tests (RDT) in Febrile Patients from Fako Division, Cameroon. Diagnos Pathol Open 7:002.

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Sampling technique

e systematic random sampling technique was used, with daily attendance as sampling frame. Recruitment of participants was done daily from Mondays to Fridays in the Limbe and Buea Regional Hospitals. Data was collected from the administration of structured questionnaires and interviews. Furthermore, each participant was given an identi cation number so as to avoid confusion in the course of the study.

Laboratory analysis

Specimen collection: e main specimens were blood and urine. Capillary blood was collected by nger pricking. 50 ul of this blood was used to make a thin and thick blood lm. Microscopic analysis was prioritized over other methods of malaria parasite determination. Urine was collected in a leak-proofed container for UMT analysis.

Microscopic examination and quanti cation of parasites: e prepared blood lms were air-dried and stained with 10% Giemsa (1 in 20 dilutions) for 25-30 min [12]. Two trained and experienced

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done. ROC curves were plotted to evaluate the accuracy of UMT and RDT against microscopy as the gold standard. Linear regression analysis was done to determine the relationship between age and parasite load.

e detection limit was calculated from the sample with the lowest parasitaemia with the true positive result. Statistical signi cance was considered at $P{<}0.05$.

Results

Demographics and clinical characteristics of patients

From a total of 786 individuals who were screened, 200 who met the inclusion criteria were enrolled between April and August 2017, which are spanning periods of high malaria transmission in the study area. In this study, 54.5% (109) of the participants were females and 45.5% (91) were males. e mean age was 27 years with the range of Nine months to 86 years. e highest malaria prevalence (23.5%) was seen in the 21-30 age groups while the least (6.5%) was found in the 41-50 age group and the 61-70 age groups. All the participants presented with fever (37.5° C) on enrollment, with a mean body temperature of 38.2°C. Headaches, body pains, nausea and chills were the most commonly reported symptoms. e participants presented with other diseases like: Diabetes, hypertension, typhoid, HIV/AIDS, TB, gastritis and asthma. In this study, 77% of the population used the Insecticide Treated Mosquito bed-nets while 23% did not.

e participants were screened for malaria parasites using Giemsa

association was observed between the prevalence of malaria and sex (P=0.345). Likewise, no signi cant association was observed between the prevalence of malaria and age (P=0.216) (Table 1).

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