

Comparison of blood smear microscopy to a rapid diagnostic test for in-vitro testing for *P. falciparum* malaria in Kenyan school children

Citation:

Neumann CG, Bwibo NO, Siekmann JH, McLean ED, Browdy B, Drorbaugh N.
"Comparison of blood smear microscopy to a rapid diagnostic test for in-vitro testing for *P. falciparum* malaria in Kenyan school children.". 2008

Abstract:

OBJECTIVE:

To compare the diagnostic performance of microscopy using Giemsa-stained thick and thin blood smears to a rapid malaria dipstick test (RDT) in detecting *P. falciparum* malaria in Kenyan school children.

DESIGN:

Randomised, controlled feeding intervention trial from 1998-2001.

SETTING:

Rural Embu district, Kenya. The area is considered endemic for malaria, with four rainy seasons per year. Chloroquine resistance was estimated in 80% of patients. Children had a spleen rate of 45%.

SUBJECTS:

A sample of 515 rural Kenyan primary school children, aged 7-11 years, who were enrolled in a feeding intervention trial from 1998-2001.

MAIN OUTCOME MEASURES:

Percent positive and negative *P. falciparum* malaria status, sensitivity, specificity and positive and negative predictive values of RDT

RESULTS:

For both years, the RDT yielded positive results of 30% in children compared to microscopy (17%). With microscopy as the "gold standard", RDT yielded a sensitivity of 81.3% in 1998 and 79.3% in 2000. Specificity was 81.6% in 1998 and 78.3% in 2000. Positive predictive value was 47.3% in 1998 and 42.6% in 2000, and negative predictive value was 95.6% in 1998 and 94.9% in 2000.

CONCLUSION:

Rapid diagnostic testing is a valuable tool for diagnosis and can shorten the interval for starting treatment, particularly where microscopy may not be feasible due to resource and distance limitations