Misdiagnosis and over treatment of clinical malaria cases and their implications in western Kenya highlands

Yaw Afrane[1], Andrew Githeko[1] and Guiyun Yan[2],

[1]Climate and Human Health Research Unit, Centre for Global Health Research, Kenya Medical Research Institute, Kisumu, Kenya

[2]Program in Public Health, College of Health Sciences, University of California at Irvine, CA, USA

Objectives

- This study investigated the diagnostic accuracy and clinical malaria case management in different health facilities in western Kenya highlands

Methods (1)

- Random blood slides were made from patients who were asked by a clinician to go for malaria test in the hospital's laboratory.
- We compared our slide reading with that of the technicians diagnosis in the hospitals.
- Blood slides were also made from patients who were presumptively treated for malaria by their symptoms.
- A questionnaire was designed to collect information from patients and clinicians to determine what contributed to decision on diagnosis of the patient.
- Data was compiled to measure the accuracy of diagnosis by clinicians and lab diagnosis

Methods (2)

- The study took place in four hospitals in three districts in western Kenya highlands
- The study started from September 2008

Results

Table 1: Summary of patients sent to the lab by clinicians in four clinics in western Kenya highlands

Our diagnosis		Diagnosis from the clinics		Treated with antimalarials
Positive	514	Positive	54.28	100
		Negative	45.72	57.45
Negative	2030	Positive	27.88	100
		Negative	72.12	68.17

Results

Table 2a: Summary of patients treated presumptively as malaria infection by the clinicians

No. of patients	Patients with fever (%)	BS positive (%)	Percentage with clinical malaria	Misdiagnosis Rate
784	52.93	46.17	36.99	63.01

Table 2b: Summary of reasons for patients presumptive treatment in percentages

No. of patients	Patients requesting no lab attendance	Patients requesting for drugs	Clinician decision	No money to pay for lab fees
784	31	15	54	33

Discussion & Conclusions

- The findings show massive over prescription of antimalarial drugs.
- The implications of these findings are that misdiagnosis and over treatment of fever cases can either result in over estimating or under estimating the burden of disease
- This makes hospital malaria cases unreliable for evaluation of malaria intervention programs
- Over and under estimating malaria burden is likely to fall most heavily on the poor and vulnerable since they have less resilience to cope with effects of prolonged ill health

Discussion & Conclusions

- Over treatment and misdiagnosis could lead to misuse of very expensive combination drugs which are currently in use
- This could also trigger early unset of drug resistance to these antimalarials.

Future perspectives

- These issues of accuracy of malaria diagnosisin health facilities deserve renewed attention in the light of first-line treatment with expensive artemisinin-combination therapy (ACT) and changing patterns of transmission intensity.

- More action needs to be taken to curtail this problem