



**Overuse of artemisinin-
combination therapy in
Mto wa Mbu (*river of
mosquitoes*),
*an area misinterpreted as high
endemic for malaria***



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Objectives



Main objectives

- To determine the endemic status: the level of Transmission intensity

Specific objectives

- To evaluate and compare use of clinical symptoms, routine microscopy and rapid diagnostic tests regarding treatment decisions in outpatient departments of the local health facilities
- To collect retrospective data (last 2 year) on malaria in the health facility
- To evaluate the level of exposure to malaria parasite among individuals in the community



Methods (1)



Study design

- Descriptive cross sectional
- Observational study
 - Retrospective: hospital data
 - Prospective: observation diagnostic practices

Target population

- Individuals in the community
 - All individuals attending at the clinic
 - Health workers
- Selected houses in community for mosquito catching will conducted every 2 weeks



Methods (2)



- **Transmission intensity**
 - Entomology: traps in houses
 - Serology: MSP-1 antibodies as marker of exposure

Mode of participation

- Periods – 5 months
- 2 sampling points



Results (1)

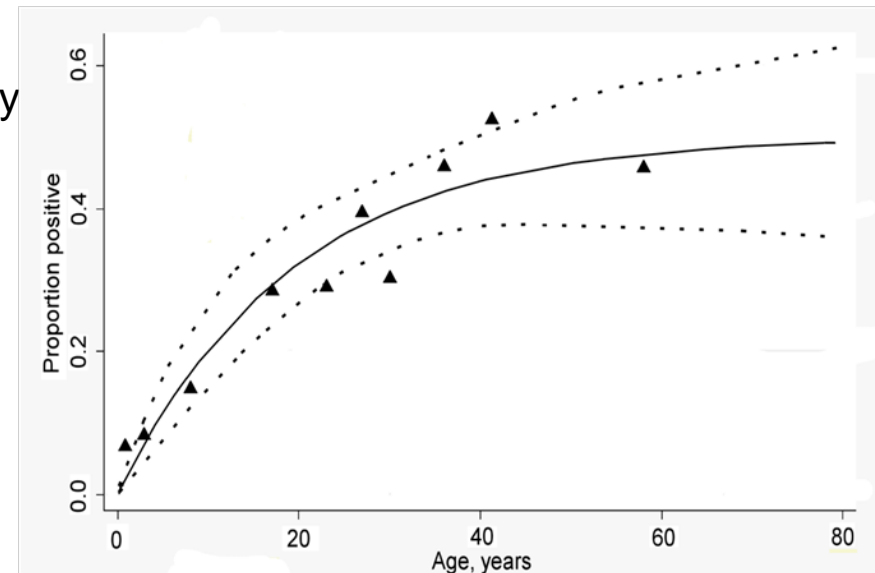


Entomology

- 10 houses trapped, in total 71 traps, 2774 mosquitoes were caught of which 331 *Anopheles*: 261 females
- One positive by sporozoite ELISA EIR = 0.69 (95% CI 0.02 – 3.83) infectious bites/person/month (ibppy).

Serology

- Antibody responses to individual malaria antigens develop slowly after exposure
- The rate at which responses develop depends on the level of transmission intensity
- 464 serum samples
- 29.5% positive for MSP-1
- EIR = 0.70 (0.26 – 1.87) ibppy

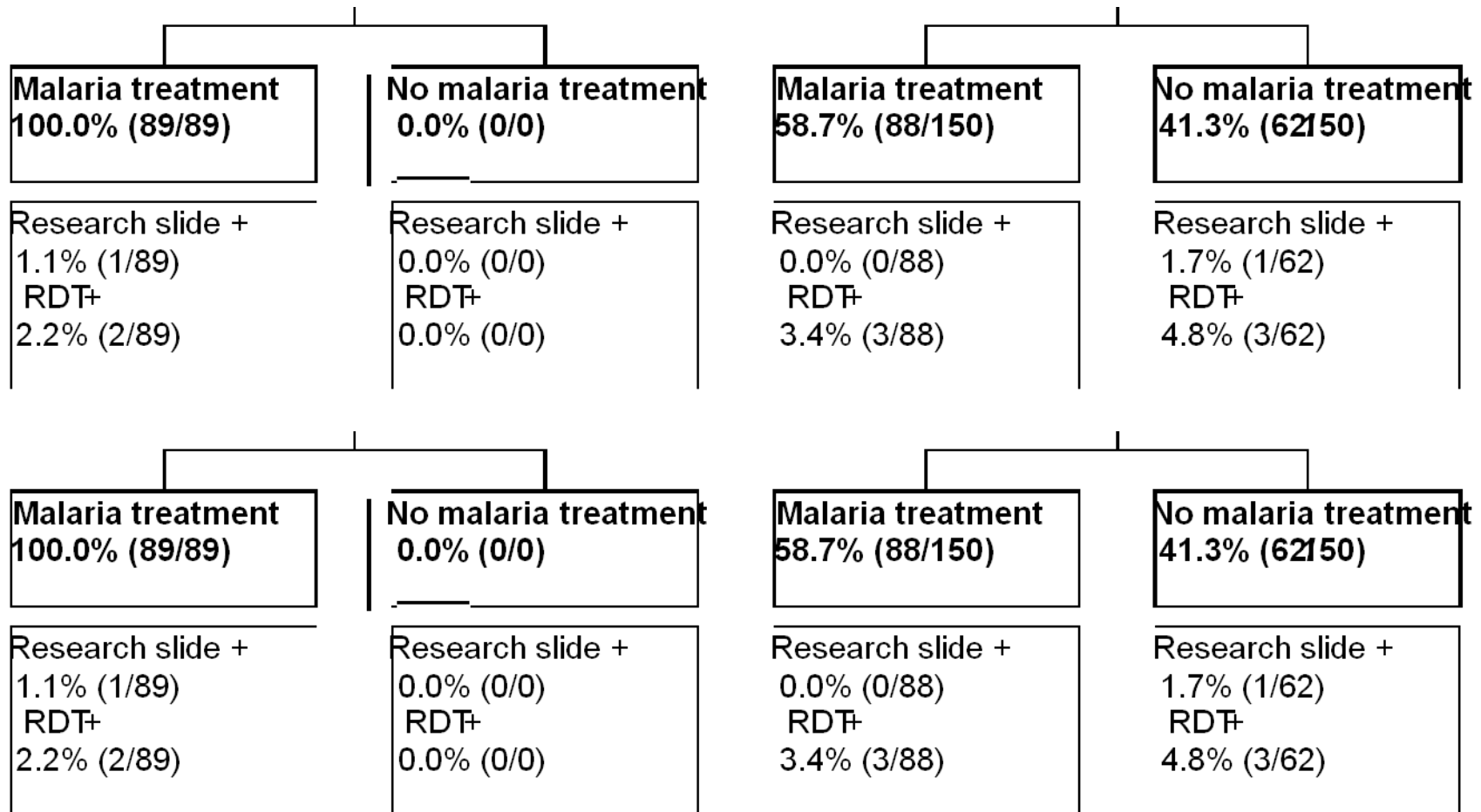




Results (2)



Malaria diagnosis





Discussion & Conclusions



- Mto wa Mbu is not a high endemic area
- Transmission dropped considerably in the last 20y
- Massive overdiagnosis of malaria
- 99.6% of the people who received expensive new artemisinin combination therapy were in fact free of malaria parasites



Future perspectives



- The discrepancy between the perceived and actual level of transmission intensity may be present in many areas in sub-Saharan Africa and calls for greater efforts in defining levels of transmission on a local scale to help rational drug-prescribing behaviour.
- The results of the study can be used to develop effective intervention strategies
- Can also assist local health facilities to set priorities and develop diagnostic algorithms.
- Design of intervention studies superimposed on standard interventions, and targeted at areas with different transmission intensity