



*The Prevalence of and Factors Contributing to  
Complicated Malaria in Children Under 5 years at  
Kampala International University Teaching Hospital*

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# COMPLETED MALARIA...

## *Brief overview*

**Malaria = infectious disease caused by protozoan parasites from the Plasmodium family that can be transmitted by the bite of the Anopheles mosquito.**

**Falciparum malaria is the most deadly type.**



**Complicated Malaria = Represents a medical emergency because it may rapidly progress to death without prompt and appropriate treatment**

**Commonly due to P. Falciparum**

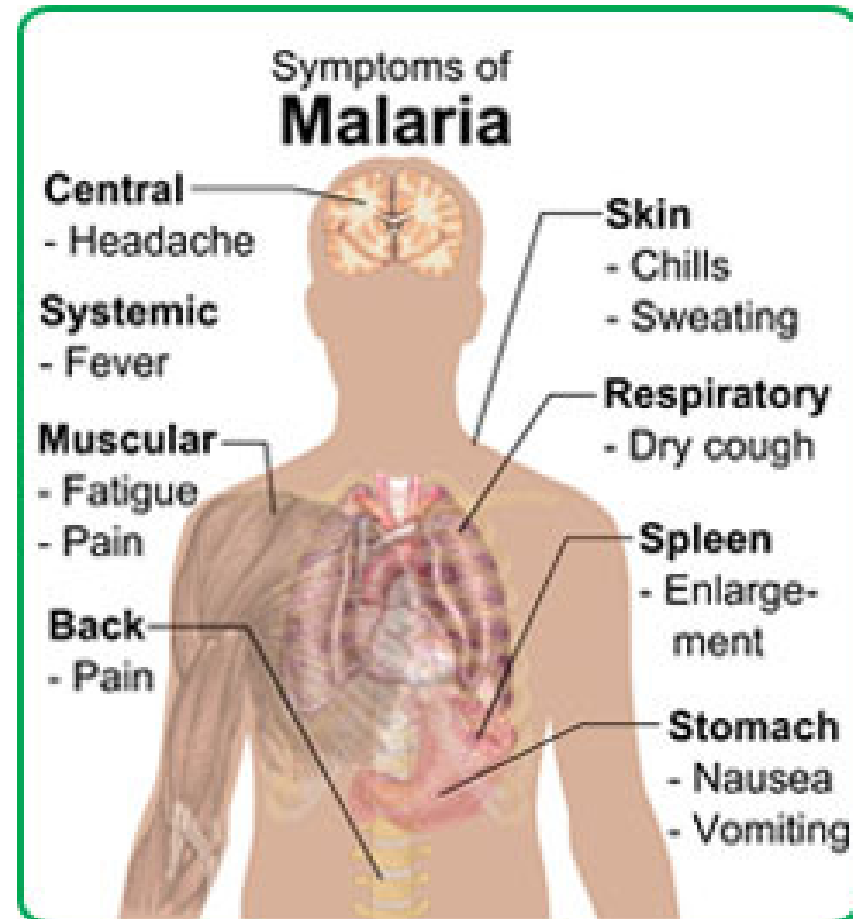
**2014 = estimated 660 000 malaria deaths, of which approximately 86% were children under five years of age.**

*Gray, 2009; Moore et al., 2002*

# COMPLICATED MALARIA...

## *Symptoms*

- ✓ Change in behaviour, confusion
- ✓ Impaired consciousness
- ✓ Multiple/recurrent convulsion;
- ✓ Respiratory distress;
- ✓ Circulatory collapse or shock;
- ✓ Jaundice;
- ✓ Bleeding tendency;
- ✓ Prostration
- ✓ Severe anaemia
- ✓ Cardiac failure.



*Moore et al., 2002; Williams et al., 1999*

# COMPLICATED MALARIA...

## Background

**Complicated Malaria is responsible for 1.5 – 2.7 million deaths annually**

**More than 80% of these deaths = in sub-Saharan Africa.**

**It is also accounts for 40% of public health expenditure with 30-50% of in-patient admissions**

**It is also responsible for 3.5 million low birth weight infants.**

**We spend 10% of our income on malaria management**

**(Alessandro, 2012)**



## COMPLICATED MALARIA...

- ✓ **Most vulnerable**
- ✓ **Not easily detectable until its too late**
- ✓ **Low immunity**
- ✓ **Always miss diagnosed**

## *Why children under 5?*



## COMPLICATED MALARIA...

## *Problem statement*

In Uganda the burden of Complicated malaria accounts for 20-23% of death among admitted children below the age of 5 yrs.

These percentages are still increasing even with

- improved anti malarial use
- Increased mosquitoes net use
- Increased use of insecticide
- Increased Health education

**So what are we not doing right????**



## COMPLICATED MALARIA...

## *Significance of the study*

**This study will provide interventions to supplement the current efforts being used to fight Malaria both at community and hospital in order to reduce the high prevalence of malaria in children under the age of 5 years.**



**The study will provide baseline information that can be used by other researchers.**

# Objectives

- To assess the prevalence of complicated malaria in children under five years attending KIUTH.
- To determine the most common complication of malaria in children under five years attending KIUTH.
- To assess the correlation between the sociodemographic data and complicated malaria.
- To evaluate the outcome of complicated malaria after management.





# MATERIAL & METHODS

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**Design** = A cross sectional retrospective study

**Area** = KIUTRH

**Cohort** = files of patients with Compeccated Malaria

**Sample size** = 200 patient files “Fishers et al 1990”

**Analysis** = SPSS Version 20.0

**Ethics BEC** = KIU7823

Size  
sample  
size  
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estimate  
Power

# MATERIAL & METHODS

## Selection criteria

### Inclusion criteria

- Files in KIUTH
- Files with complete records
- children below 5 years
- all files with malaria cases

### Exclusion criteria

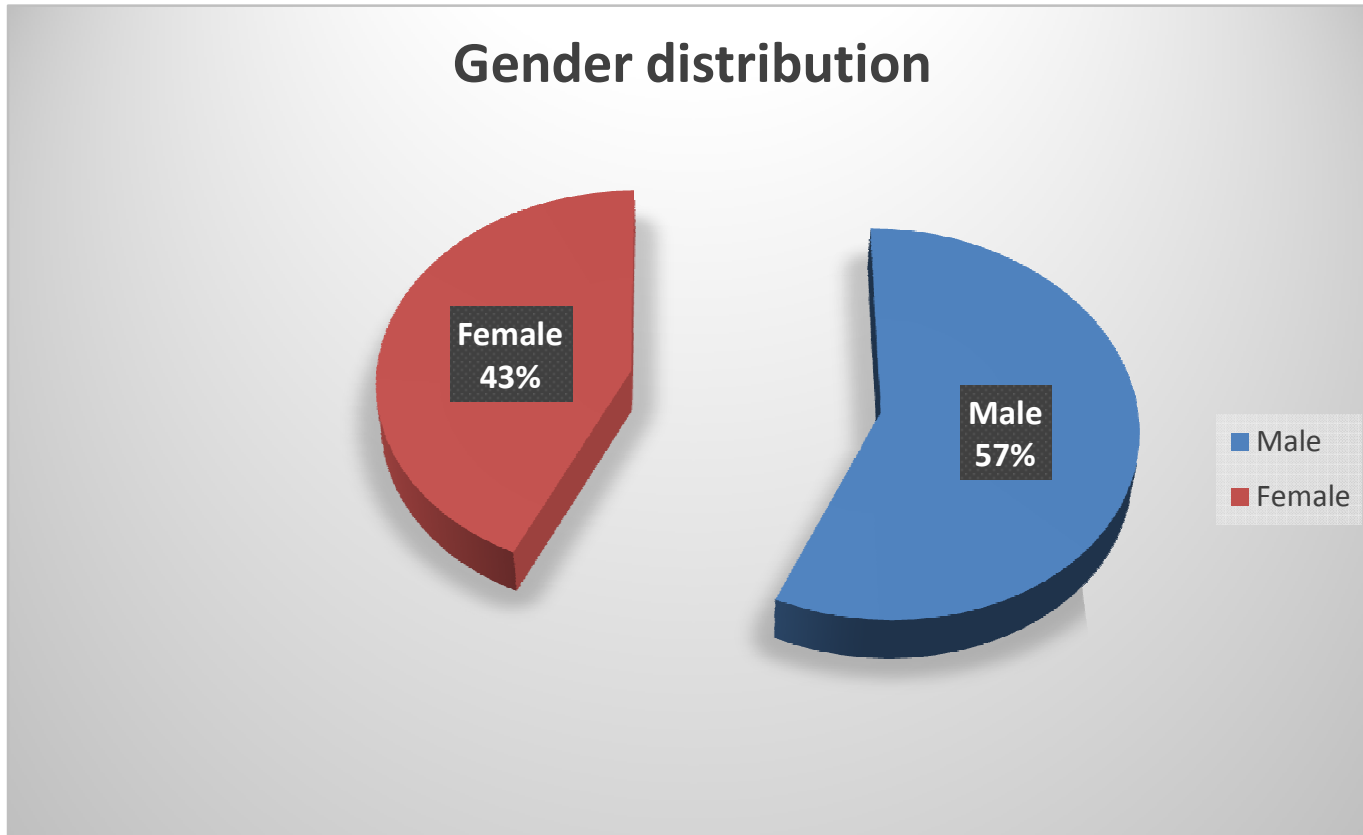
- files with incomplete data
- none Ugandans
- children above 5 years

Size sample error formula estimate Power  
sample size



## RESULTS....

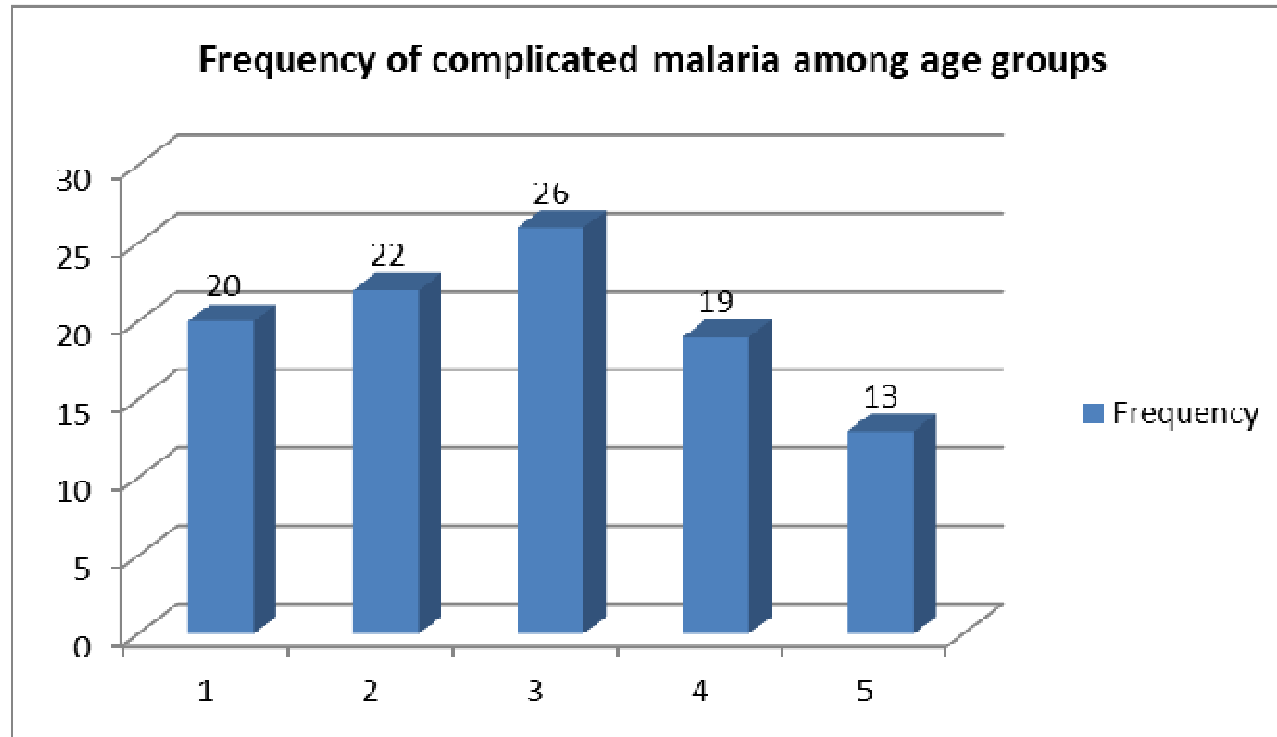
## Demography





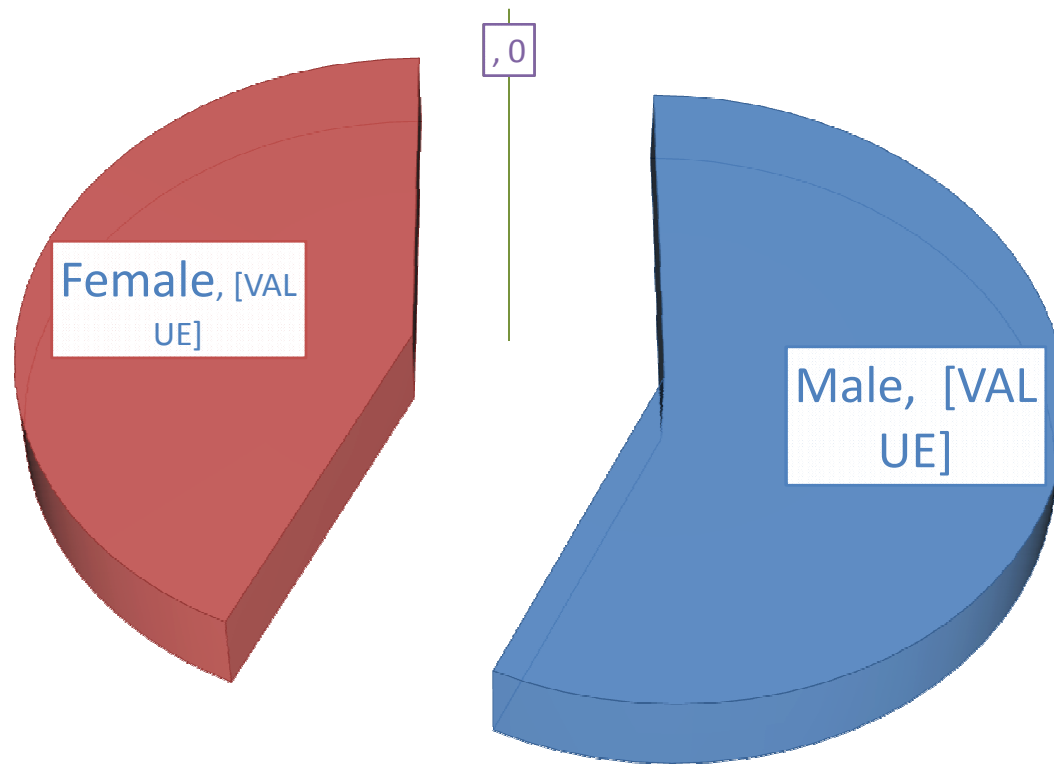
# RESULTS...

## Age groups



$\chi^2=0.85 < 0.05$  (p=0.05)

**Gender distribution of Complicated Malaria**



$\chi^2=1.54$  E-23 p = 0.022 p<0.05







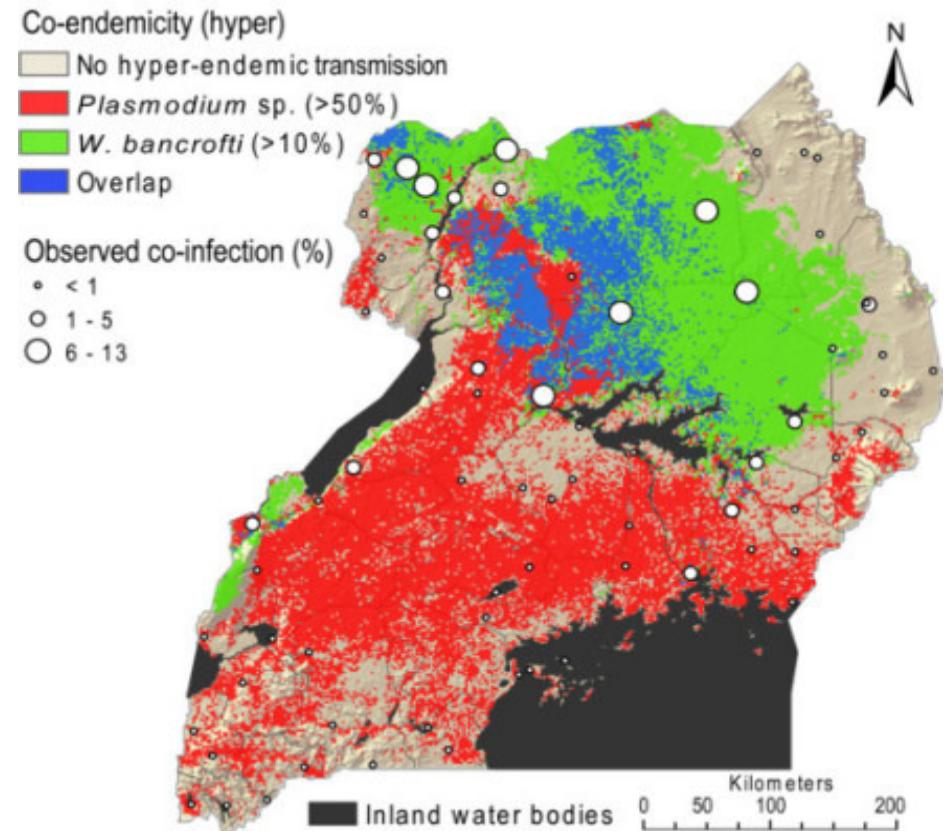
# DISCUSSION

**Bushenyi = 13%**

**Ethiopia which had 4.2%**

**Kisumu = 8.6%**

**General incidence of 23%  
during the time of data  
collection.**



(Mitiku,2000), (Okumu, 2009)

# DISCUSSION

## Gender comparison

Most male children (57%)

Marakimwuku noted High incidence in boys at 63%

## Presentation of C Malaria

Most common Convulsions 69%

Followed by Hypoglycaemia 59%

WHO = Convulsions



(Meramikwu, 2003)

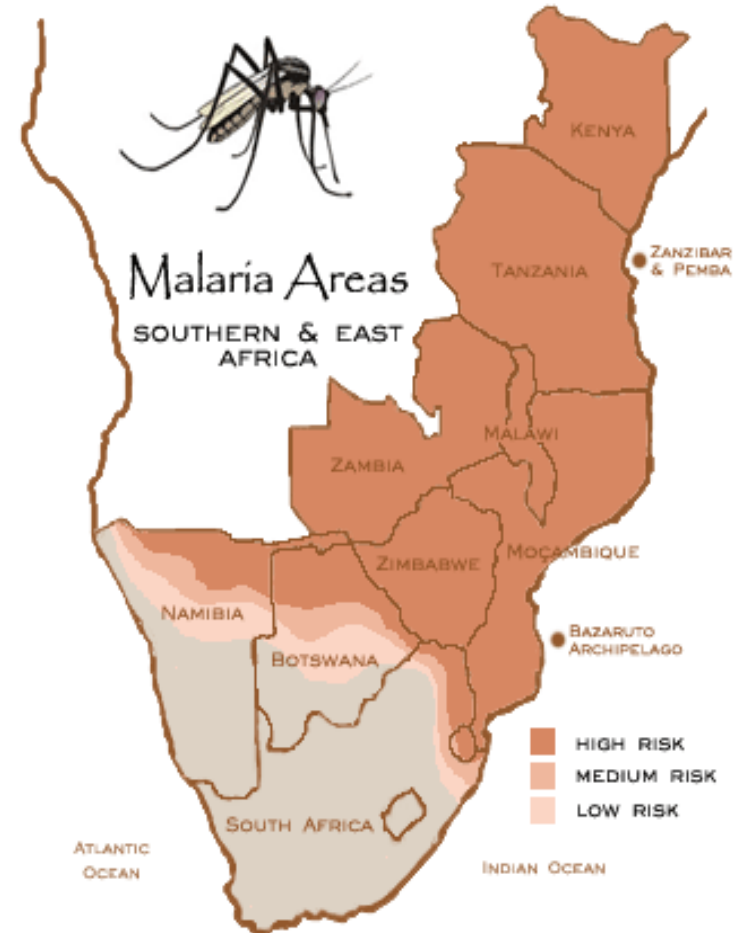
# CONCLUSION

**There is high prevalence (13%) of complicated malaria in Ishaka as compared to other endemic regions.**

**Males were more susceptible to complicated malaria**

**Convulsions, hyperparasitemia and hypoglycemia are the most common features**

**Complicated malaria has high mortality rate with 28 (14%) deaths**



# References



1. Hopkins *et al*, (2007). Children Presenting with complicated Malaria National Guidelines for Malaria Treatment.
2. Kuile Meremikwu *et al*, (2003) Antimalarial drug prescribing practice in private and public health facilities in South-east Nigeria: a descriptive study. *Malaria journal*(2003) p 6-55
3. Hammerich *et al*,. (2008) Case-management of malaria in children (AL) in UGANDA. *Malaria journal* Vol 19. P 181
4. Schlaeder *et al*,. (1998) A Challenge to Malaria Control in Ghana. *Medical principles and practice* Vol 14 P 332–337
5. Maurice, (2009). Malaria in children under 5 years, . P 445
6. Abdo-Rabbo *et al*, (2000) Baseline management of malaria in Africa. *Malaria journal*. P 156
7. Gladys Tetteh *et al*,(2006) Assessment of malaria in children in Public and Private Sectors of Kenya.
8. Ministry of Health Uganda, antimalarials prescribing and dispensing practices in health centers of Khartoum state. *Malaria journal* (2008) Vol 3 P 231
9. White NJ, Breman JG. Malaria and Babesiosis (2001) Diseases caused by red blood cell parasites.
10. Braunwald E, Fauci A, Kasper DL *et al*, (2002). *Harrison's Principles of Internal Medicine*. Ed 15. P 572



Thank you