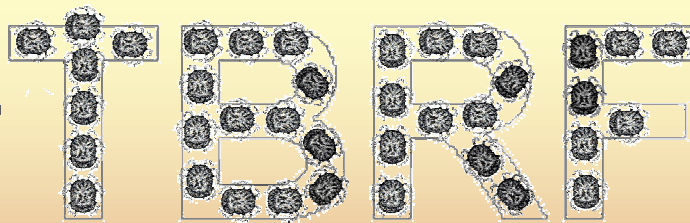


**i  
c  
k**

**O  
r  
n  
e**

**e  
l  
a  
p  
s  
i  
n  
g**

**e  
v  
e  
r**



**Meeting 2003**

**Mvumi**

## Pathogen

- Bacteria of the genus *Borrelia*
  - highly motile spirochetes
  - many different species causing TBRF in Old and New World
  - In Tanzania the predominant species is *Borrelia duttonii*

## *Borrelia duttonii*

- Reservoir - humans only
- Vector - soft ticks *Ornithodoros moubata* superspecies complex

## TBRF infection

- Characterised by episodes of fever lasting 3 days, associated with headache, muscle pains, arthralgia and abdominal pain
- Followed by apyrexial episode of 7 days
- Then relapse of fever up to 13 times

## At risk groups

- Those living in tick-infested houses with earth floors
- Disease most common in young children  
Dodoma 75% and Mwanza 55% of cases in under 5s
- Can be severe in pregnant women and neonates: premature labour, stillbirth, early neonatal deaths

## Diagnosis

- Presence of spirochetes on microscopy of blood slide stained with Giemsa stain
- Fluorescence microscopy with acridine-orange stain
- Phase contrast or dark field microscopy
- Research - PCR detection of *Borrelia* flagellin gene

## Treatment

- Antibiotics:
- in children PPF (Procaine Penicillin Fortified) by IM injection 30,000 Units/kg once daily for 5 days
- in adults oral tetracycline 500mg qid for 5 days
- in pregnant women PPF by IM injection 0.8M.U O.D for 5 days or oral erythromycin 500mg qid for 5 days

## Jarisch-Herxheimer Reaction to treatment

- Less frequent in TBRF than LBRF
- Occurs 1 hour after treatment
- Chill phase lasts up to 30 mins: rigors, brisk rise in temp, pulse, resp. rates and Bp
- Peak temp 2-3 hours post-treatment, spirochetes disappear from blood
- Flush phase: Bp falls, intense sweating
- Risk of cardiovascular collapse and death
- No specific drug treatment: supportive therapy with IV normal saline to prevent hypotension, nurse in bed

## Mortality

- Dodoma (Barclay and Coulter): 1.6% in children but 8.4% of those admitted
- Tabora (Jongen et al) : 1.5% in pregnant women and perinatal mortality rate of 43.6%

## TBRF distribution in Tanzania



## Burden of disease

- No routine reporting under HMIS
- Prevalence studies in Dodoma Rural: 5% of febrile children have TBRF (Kisininza )
- Annual incidence rate in Dodoma Rural: ranges from 59/1000 (Talbert) to 163/1000 (Barclay) under 5s
- Estimated cases in Dodoma Region in order of magnitude of 10,000s per year

## Time for a new survey?

- Last major survey of distribution of ticks and TBRF in 18 sites was in 1950 reported by Phipps in East African Medical Journal
- Highest density of ticks and proportion of infested houses in Itigi, Singida, Kahama, Dodoma, Kondoa, Iringa
- No direct correlation of tick prevalence to reported cases of disease

## Still hanging on...

