

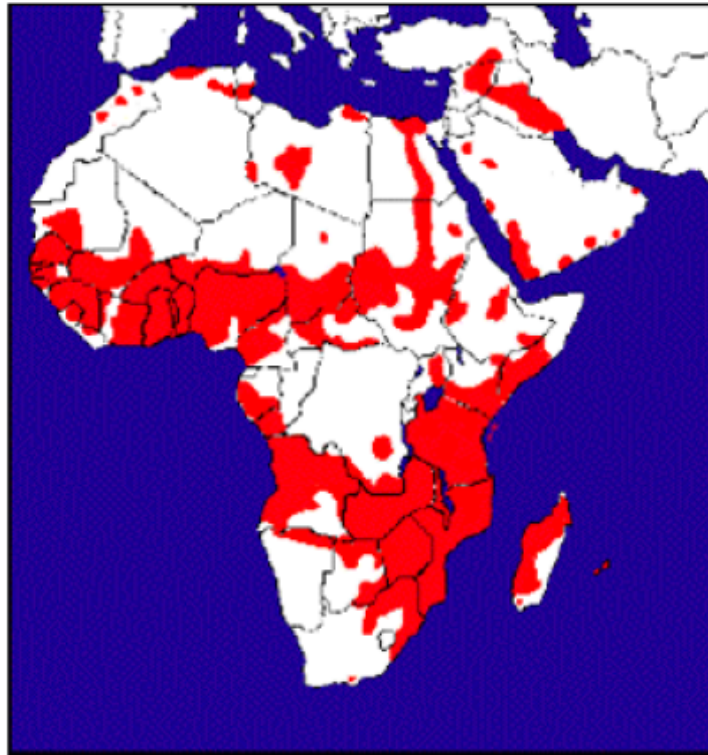
MANAGEMENT OF FEMALE GENITAL
SCHISTOSOMIASIS/MALE GENITAL
SCHISTOSOMIASIS AND HIV
COINFECTION

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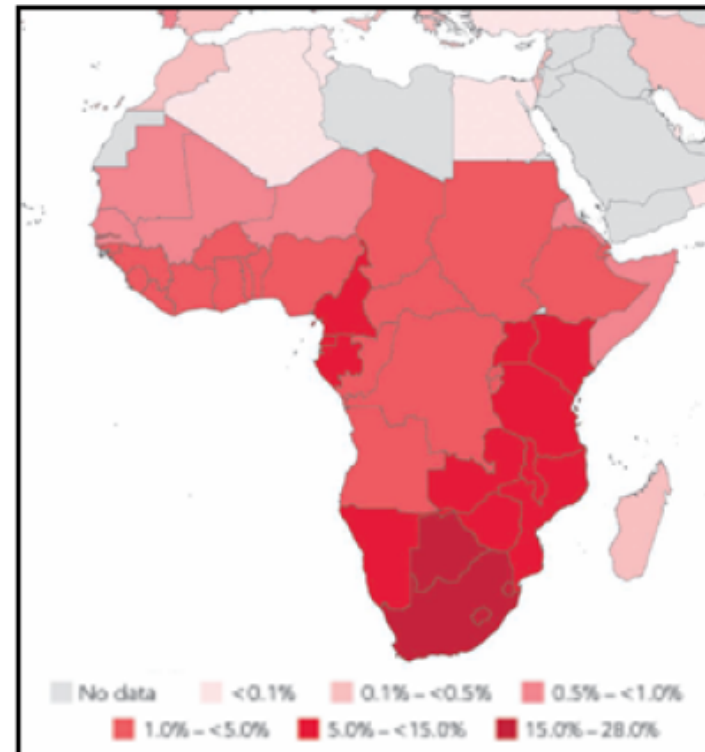
EPIDEMIOLOGY

- 207 million people infected
- 85% in Africa
- >50% urogenital schistosomiasis
- Affects both urinary and genital in 75% of infected individuals.

Epidemiological mapping of HIV and urogenital schistosomiasis



Urogenital Schistosomiasis
King C, 2001



HIV Prevalence in Adults Aged 15-49
UNAIDS, 2010

Female genital schistosomiasis

- the clinical picture of urogenital schistosomiasis may present with a range of signs and symptoms including lesions of the cervix and vagina, vaginal bleeding, pain during sexual intercourse and nodules in the vulva.
- There may also be long-term irreversible consequences, including infertility

FGS

- Infection with schistosomiasis infection increases the risk of HIV acquisition.
- Study in Zimbabwe 3fold increase , in Tanzania 4 fold
 - Impaired barrier function, thinning, erosion, inflammation and ulceration
 - Immunomodulation, cellular and humoral

MALE GENITAL SCHISTOSOMIASIS

- Several male reproductive organs involved, prostate, seminal vesicle and vas deferens
- Penis not involved.
- Present normally with haemospermia and painful ejaculation
- Also increased risk of HIV acquisition mainly through immunomodulation

EFFECT OF SCHISTOSOMIASIS ON HIV

- Increase the ease of transmission of HIV due to increased viral shedding.
- Speed progression of the disease by rapid increase in viral load due to up regulation of chemokine receptors which promote cell to cell spread of infection
- Brown et al 2004, no effect on progression in patient with S.mansoni

MANAGEMENT

- Early intervention with mass treatment in school going kids to prevent FSG, therefore HIV
- It is well documented that the irreversible pathology caused by schistosomiasis that occurs in adulthood can be effectively prevented by early treatment in childhood.
- 3 treatments with praziquantel during the primary school years reduce bladder pathology at a later age to almost zero. Even a single treatment given in childhood prevents half of the cases of FGS

MANAGEMENT

- Hypothetically schistosomiasis is supposed to speed HIV progression by raising the plasma HIV RNA concentration due to upregulation of chemokine receptors.
- If true then treatment of FGS/MGS could delay development of AIDS and spread of HIV in Sub-Saharan Africa

Observational Studies Assessing Effect of Praziquantel Treatment for *S. mansoni* on HIV-RNA levels in Individuals with HIV Infection

Lawn SD et al, <i>AIDS</i> 2000 [62]	HIV RNA levels increased significantly over a mean of 5.6 months of follow-up.	Observational studies: -Effects may be more attributable to length of follow-up time and to effects of HIV infection than to praziquantel treatment. -No control groups or randomization.
Elliott AM et al, <i>Trans Roy Soc Trop Med Hyg</i> 2003 [63]	HIV RNA levels transiently increased (at 5 weeks after treatment) and then returned to pre-treatment baseline by 4 months.	
Brown M et al, <i>J Infect Dis</i> 2004 [64]	HIV RNA levels were not significantly different pre- and post- treatment in HIV/ <i>S. mansoni</i> co-infected individuals.	
Modjarrad K et al, <i>J Infect Dis</i> 2005 [65]	HIV RNA levels increased (nonsignificantly) over the 16-week post-treatment follow-up.	
Brown M et al, <i>J Infect Dis</i> 2005 [66]	HIV RNA levels transiently increased 1 month after treatment and then returned to pre-treatment levels by month 5.	

Randomized Trial Assessing Effect of Praziquantel Treatment for *S. mansoni* in Individuals with HIV Infection

Kallestrup P et al, <i>J Infect Dis</i> 2005 [60]	HIV-positive patients who were randomized to receive praziquantel immediately had smaller HIV RNA level increases and increased CD4+ T-cell count compared with those randomized to treatment after 3 months.	Randomized but not blinded so potential for bias in follow-up.
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MANAGEMENT

- Systematic review, Beneficial in patients with HIV 1, decrease in viral load +/- increase in CD4 count(walson, john-stewart 2007)
- Treatment of lymphatic filariasis and ascariasis showed some benefit (significant decrease in HIV RNA levels and increase in CD4(Nielsen et al, Walson et al)

- No overwhelming evidence but possibility of slowing progression but decreasing the rate of viral replication.
- Possibility of enhancing immunity but increasing the CD4 count

Management

- More research needed
- Challenges
 - Methodological
 - Ethical
 - Lack of collaboration and policies
 - Diagnostic problems

- THANK YOU

REFERENCES

- Mbabazi PS, Andan O, Fitzgerald DW, Chitsulo L, Engels D, et al. (2011) Examining the Relationship between Urogenital Schistosomiasis and HIV Infection. PLoS Negl Trop Dis 5(12): e1396. doi:10.1371/journal.pntd.0001396
- World Health Organization (2010) Schistosomiasis. Fact Sheet No. 115, February 2010.