Loa loa - More Than Meets The Eye?

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The Parasite, The Vector & The Host

- Parasitic nematode worm with a complex life cycle involving human and horsefly hosts.

- Transmission occurs during horsefly feeding on human blood.

- Causes the disease loiasis, characterised by “eyeworm” and Calabar swellings.

- Previously considered a benign infection, with little associated morbidity/mortality.

*Whittaker et al, Trends In Parasitology, 2017*
Loiasis As A Significant Public Health Issue?

Excess mortality associated with loiasis: a retrospective population-based cohort study
Cédric B Chesnais, Innocent Takougang, Marius Paguebé, Sébastien D Pion, Michel Boussinesq

Summary
Background The burden of loiasis has received limited attention and loiasis is still considered a benign condition. To assess whether loiasis bears any excess mortality, we did a retrospective cohort study in Cameroon.

• 2017 saw discovery of a significant association between infection with *Loa loa* and excess mortality.
  • Population attributable fraction for mortality of 15% in study area in Cameroon.

• Estimated 10 million infected individuals across Central Africa.
  • Suggests that loiasis warrants attention as a significant public health issue.

Image from: http://www.who.int/apoc/raploa/en/
EPILOA – A Tool To Explore The Epidemiology of Loiasis

- EPILOA- An age and sex structured mathematical model of loiasis transmission.

- Accurately captures the dynamics of the infection in Cameroonian communities.
EPILOA Allows Us To Explore Complex, But Highly Relevant Questions

- Exploration of Epidemiological Questions
  - Is elimination feasible?
  - What is the burden of disease?
  - Why do we see the patterns of infections we see?

EPILOA

- Evaluation of Interventions Targeting the Disease

Impact of annual mass drug administration on *Onchocerca volvulus* microfilarial prevalence.

Walker et al, *Epidemics*, 2017
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