The dispersal of visceral leishmaniasis during the peak of the Roman Empire.

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The *Leishmania donovani* species complex (LDSC, *L. donovani* and *L. infantum*) causes visceral leishmaniasis. These species are currently widely distributed throughout north and east Africa, the Arabian Peninsula, central Asia, and the Indian subcontinent. Previous reports have suggested that *L. donovani* and *L. infantum* diverged between one and ten million years ago. Here, we use population genomic analysis of over 800 genomes to show that the divergence of this species was far more recent – most likely within the last 2000 years of human history.

Details: Ancient DNA and population genomic data indicate that the visceral leishmaniasis originated in East Africa - but the timing and route of global dispersal of this disease are not well understood. We used genome data to estimate regional population split dates, showing that the LDSC began to migrate of Africa in approximately 200 CE, consistent with dispersal during the height of the Roman Empire, when the Axumite Empire in modern day Ethiopia was a major international trade route. From Axumite Empire, passage on the Nile River would lead to the populous Roman city of Alexandria.

We show that the complex likely arrived in Turkey and the Arabian Peninsula by 700 CE, India by 750 CE. The *L. infantum* clade is not well-supported as a species, but rather a sub-population of *L. donovani.*, which arose in approximately 722 CE. We estimate that *L. infantum* was introduced to South America from the Iberian Peninsula population almost a millennium later (~1650 CE), clearly implicating the Portuguese colonisers.

These results revise our understanding of the history of visceral leishmaniasis. Importantly, the people of East Africa appear to have been exposed to *L. donovani* for at least one thousand years before European colonisers introduced *L. infantum* to native American people.