

Letter to Editor

Can a Parasite Save Humanity? The Rare Case of Fascioliasis

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We recently read with great interest a newly published update on the development and evaluation of a novel group of vaccines against NTDs [1]. In this article, the authors elaborate on the ground-breaking approaches in application to develop vaccines against a group of mainly parasitic, multi-cellular organisms possessing immune-modulating properties. This group of vaccines therefore requires a whole new approach and protocols for efficacy testing and vaccine development that are to date still within the realm of 'weird science [1].'

The discussion and conclusions presented herein brought me full circle to another NTD of growing global interest, fascioliasis. As a disease of both humans and animals, the rather rudimentary parasite driving this illness in over 90% of the world to date is one of the best studied trematodes (flat worms) in the history of veterinary and human medicine [2]. This fact however, has not simplified attempts at controlling the disease or developing effective vaccines against the worms of the genus *Fasciola*. Having been recorded as early as 2000 BC with evidence of infection found in mummies from the earliest Egyptian dynasties, fascioliasis has grown in prevalence from just under 1 million reported cases in the early 1980s to estimates of about 70 million human cases to date [3]. Many authorities attribute this drastic rise in prevalence data to improved awareness and diagnostics of the disease [2].

These advances have however developed alongside some rather ground-breaking advances in immunology, diagnostics, disease pathology and policy to tackle a range of previously under-prioritised diseases (NTDs), to mention but a few changes in the health industry today. Without undermining the numerous advances gained however, the rise in numbers of infected does ring an uncomfortable derision to the gallant efforts in the fight against the NTDs in general and fascioliasis in particular.

In a series of articles published since the first reported cases of human fascioliasis in Tanzania [3-6], the authors have tried to point out some of the daunting challenges faced by typical

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low and middle income countries (LMICs) while combating the NTDs in general. A One Health approach to critical aspects of the parasite infectious cycle would address; human and veterinary medical practice, environment and ecosystem health, food and water safety and security, immigration and global trade as well as political will and commitment to control strategies. These strategies would further apply to both the high income countries, where the bulk of ground-breaking research and technologies are developed for, and the LMICs where the bulk of the disease burden is reported [4]. A multidisciplinary approach to control strategies and policy formulations rings out in most of the literature on the NTDs in general, as well as novel and bold approaches to their control [3,4].

Reflecting on the article by Brelsford et al., the authors propose paradigm shifting approaches to the development and assessment of novel vaccines in NTD control. We would like to propose similar novel and multidisciplinary approaches on a much broader One Health approach to tackle a disease like fascioliasis. Indeed, the issues at stake not only bring together humanity as a whole, but incorporate ecological and environmental issues, food/ water security and safety, integration of human and animal research and most of all, a convergence of ideas, efforts and policies that would not only unite humanity, but probably address some of the most critical threats to our continued existence.

In our combined effort to control an age old parasite, can we address the greater threats to human existence?

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