

## Comments on eurytrematosis in Brazil and the possibility of human infection

Claiton I Schwartz, Luan C Henker, Ricardo E Mendes

Claiton I Schwartz, Luan C Henker, Ricardo E Mendes, Laboratório de Patologia Veterinária, Instituto Federal Catarinense, Concórdia, Santa Catarina 89703-720, Brazil

**Author contributions:** Schwartz CI and Mendes RE wrote and revised this letter; Henker LC revised this letter.

**Conflict-of-interest statement:** The authors declare that there is no conflict of interest.

**Open-Access:** This article is an open-access article which was selected by an in-house editor and fully peer-reviewed by external reviewers. It is distributed in accordance with the Creative Commons Attribution Non Commercial (CC BY-NC 4.0) license, which permits others to distribute, remix, adapt, build upon this work non-commercially, and license their derivative works on different terms, provided the original work is properly cited and the use is non-commercial. See: <http://creativecommons.org/licenses/by-nc/4.0/>

**Manuscript source:** Unsolicited manuscript

**Correspondence to:** Ricardo E Mendes, PhD, Laboratório de Patologia Veterinária, Instituto Federal Catarinense, Campus Concórdia, SC 283, Km 8, Concórdia, Santa Catarina 89703-720, Brazil. [ricardo.mendes@ifc-concordia.edu.br](mailto:ricardo.mendes@ifc-concordia.edu.br)  
Telephone: +55-49-34414818

**Received:** July 7, 2016

**Peer-review started:** July 14, 2016

**First decision:** September 12, 2016

**Revised:** September 16, 2016

**Accepted:** November 16, 2016

**Article in press:** November 17, 2016

**Published online:** February 20, 2017

### Abstract

The manuscript "Eurytrematosis: An emerging and neglected disease in South Brazil" discusses some aspects of *Eurytrema* sp. fluke as an animal pathogen and based in some aspects of the parasitism in cattle and the life cycle of *Eurytrema* sp. Authors suggest the possibility of

human infection, once there is no research on this subject in Brazil. In human cases reported, the mechanism of infection was not disclosed, so it keeps the discussion opened. Although we focused on animal eurytrematosis, we speculated the possibility of human infection by *Eurytrema* sp. in Brazil, but after all, the only way to determine it, would be a study searching for people infected through coprological or serological tests.

**Key words:** Veterinary parasitology; Cattle; Pancreas; *Eurytrema coelomaticum*; Pathology

© The Author(s) 2017. Published by Baishideng Publishing Group Inc. All rights reserved.

**Core tip:** The possibility of human infection by flukes of the genus *Eurytrema* in Brazil is reviewed. Based on the life cycle of the parasite and the high prevalence of infection in cattle, the possibility is suggested, although only an investigation with coprological or parasitological tests could give some reliable information.

Schwartz CI, Henker LC, Mendes RE. Comments on eurytrematosis in Brazil and the possibility of human infection. *World J Exp Med* 2017; 7(1): 40-41 Available from: URL: <http://www.wjgnet.com/2220-315X/full/v7/i1/40.htm> DOI: <http://dx.doi.org/10.5493/wjem.v7.i1.40>

### TO THE EDITOR

The manuscript "Eurytrematosis: An emerging and neglected disease in South Brazil"<sup>[1]</sup> discusses some aspects of *Eurytrema* sp. fluke as an animal pathogen, regarding its prevalence, subclinical disease and possible productive losses related to parasitism. Additionally, based in some aspects of the parasitism in cattle and the life cycle of *Eurytrema* sp., the authors suggest the possibility of human infection. Since this work is

an editorial, the aim was to make comments on an important topic, regarding its current research status and future directions that will promote development of this subject.

We have read with interest the letter to the editor by Pinto *et al.*<sup>[2]</sup>. Although, authors seem to have made an error of interpretation, as they say on the manuscript that eurytremiasis was suggested by Schwartz *et al.*<sup>[1]</sup> to be a neglected and emerging human disease in Brazil. We would like to make clear that our manuscript reviews aspects about bovine's eurytrematosis, and suggests that the disease is neglected and emerging as an important pathogen for cattle in south Brazil, since we basically work with animal diseases. Furthermore, the majority of veterinarians believe the parasite is non pathogenic, information contradicted by us<sup>[2,3]</sup>. Based on the previously cited arguments, we only suggest the possibility of human subclinical infections, there is no research on this topic in Brazil. Also, at the time of writing the manuscript<sup>[1]</sup>, no molecular identification had been conducted on specimens of *Eurytrema* *sp.* in Brazil. Based on this information, we speculate the parasite present in Brazil could be *E. pancreaticum*, which could be also present in human beings. Nowadays, our research group has already established by molecular technics that the parasite present in south Brazil is *E. coelomaticum*<sup>[3]</sup>, which is not described as a human pathogen in the literature.

Pinto *et al.*<sup>[2]</sup> criticize the life cycle of *Eurytrema* *sp.* showed in our editorial, once there is no evidence of infection through the ingestion of metacercariae over the pasture. In fact, it was a mistake to suggest this mechanism of infection without scientific support; although we believe that it could be possible, based on the high prevalence of the parasitism and the questionable probability of accidental ingestion of insects such as *Conocephalus* *spp.* by 70% of cattle in some regions. The liberation of metacercariae over the pasture by live grasshoppers, in our opinion, could better justify the high prevalence of infection by *Eurytrema* *sp.* where it occurs, although there is no scientific evidence of this for now. It is inconceivable, to think that 70% of dairy cattle in the area, in 100% of farms, were infected only by the ingestion of these insects. Specially taking into account that when someone walks in the field their agility is noted. Furthermore is quite uncommon to find dead specimens available to be ingested by ruminants. We have found up to 2578 *E. coelomaticum* flukes in a pancreas of one cattle, and the average was 532<sup>[3,4]</sup>.

According to Headley<sup>[5]</sup>, the fact that *E. pancreaticum*

has already been identified in human beings should not be ignored and more epidemiological data must be obtained and analyzed to establish the form of transmission to human beings, thereby discovering the potential of this fluke as a threat to human health. In the case reported by Ishii *et al.*<sup>[6]</sup>, it was not possible to determine how the person got infected, but the author presume that she accidentally ingested metacercariae in or from an infected grasshopper.

Pinto *et al.*<sup>[2]</sup> defend that there is no possibility of human infection by *Eurytrema* *sp.* in Brazil. Still, the species that occurs in Brazil is *Eurytrema coelomaticum*, as we later established<sup>[3]</sup> and the human cases reported in the literature are due infection by *Eurytrema pancreaticum*<sup>[6]</sup>. In the editorial<sup>[1]</sup>, we mentioned the possibility of infection but we have not focused on this aspect and we have not discussed this in detail as thoroughly as Pinto *et al.*<sup>[2]</sup>. We have detailed the current research status and future directions of eurytrematosis in cattle. The arguments proposed by them<sup>[2]</sup> make clear that the possibility of human infection by *Eurytrema* *sp.* in Brazil is low, but after all, the only way to determine it, would be a study searching for people infected through coprological or serological tests<sup>[7]</sup>.

## REFERENCES

- 1 Schwartz CI, Lucca NJ, da Silva AS, Baska P, Bonetto G, Gabriel ME, Centofanti F, Mendes RE. Eurytrematosis: An emerging and neglected disease in South Brazil. *World J Exp Med* 2015; **5**: 160-163 [PMID: 26309817 DOI: 10.5493/wjem.v5.i3.160]
- 2 Pinto HA, de Melo AL. Comments on human eurytremiasis in Brazil. *World J Exp Med* 2016; **6**: 55-57 [PMID: 27226956 DOI: 10.5493/wjem.v6.i2.55]
- 3 Schwartz CI, Gabriel ME, Henker LC, Bottari NB, Carmo Gd, Guarda Ndos S, Moresco RN, Machado G, Morsch VM, Schetinger MR, Stedille FA, Baska P, Mattei V, da Silva AS, Mendes RE. Oxidative stress associated with pathological changes in the pancreas of cattle naturally infected by *Eurytrema coelomaticum*. *Vet Parasitol* 2016; **223**: 102-110 [PMID: 27198785 DOI: 10.1016/j.vetpar.2016.04.034]
- 4 Schwartz CI, do Carmo GM, Bottari NB, da Silva ES, Gabriel ME, Lucca NJ, Guarda Ndos S, Moresco RN, Machado G, Morsch VM, Schetinger MR, Stefani LM, Mendes RE, Da Silva AS. Relationship Between Pathological Findings and Cholinesterase Activity and Nitric Oxide Levels in Cattle Infected Naturally by *Eurytrema coelomaticum*. *J Comp Pathol* 2016; **154**: 150-156 [PMID: 26929158 DOI: 10.1016/j.jcpa.2016.01.009]
- 5 Headley SA. Bovine eurytrematosis: life cycle, pathologic manifestations and public health considerations. *Cesumar* 2000; **2**: 59-62
- 6 Ishii Y, Koga M, Fujino T, Higo H, Ishibashi J, Oka K, Saito S. Human infection with the pancreas fluke, *Eurytrema pancreaticum*. *Am J Trop Med Hyg* 1983; **32**: 1019-1022 [PMID: 6625056]
- 7 Mattos Júnior DG, Vianna SS. O *Eurytrema coelomaticum* (Trematoda: dicrocoeliidae) no Brasil. *Arq Flum Med* 1987; **2**: 3-7

P- Reviewer: Langdon S, Sugawara I, Wang B S- Editor: Qiu S

L- Editor: A E- Editor: Lu YJ





Published by **Baishideng Publishing Group Inc**

8226 Regency Drive, Pleasanton, CA 94588, USA

Telephone: +1-925-223-8242

Fax: +1-925-223-8243

E-mail: [bpgoffice@wjgnet.com](mailto:bpgoffice@wjgnet.com)

Help Desk: <http://www.wjgnet.com/esps/helpdesk.aspx>

<http://www.wjgnet.com>

