Angiostrongyliasis due to A. cantonensis: first evidence in French Territories of America & an up-date in all French Overseas Territories


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Angiostrongyliasis due to *A. cantonensis*: first evidence in French Territories of America & an up-date in all French Overseas Territories

**Introduction**

Angiostrongyliasis is caused by *A. cantonensis*, a nematode of the rat pulmonary arterioles. It is a leading cause of eosinophilic meningitis in humans and is a major public health problem in Southeast Asia, South America, and French islands in the Pacific. This study reports the first cases of human angiostrongyliasis (IA) in the French Territories of America and provides an up-date in all French Overseas Territories (FOTs).

**Geographic distribution (Figure 2)**

- **Most human cases**: South America, Pacific Islands, Martinique, French Guiana, Mayotte Island, Reunion Island
- **Also possible in some limited areas of China and both American continents**
- **The Hosts Arthropods**: Recent emergence in Cuba, Dominican Republic, Jamaica
- **In French Territories of the Americas (Guadeloupe, Martinique and French Guiana)**: no human cases documented so far

**Objectives**

- **Report the first cases of human angiostrongyliasis (IA) in the French Territories of the Americas (Martinique, Guadeloupe, French Guiana) & perform an investigation of the environmental presence of A. cantonensis in these areas**
- **Provide an update of this disease in all French overseas territories (French Polynesia, New Caledonia, Mayotte Island, La Réunion Island)**

**Materials & Methods**

**Clinical study**: Between 1999 and 2017, all cases of eosinophilic meningitis in French Antilles and French Guiana were investigated using real-time PCR of CSF to detect specific antibodies in sera and CSF. Descriptive analysis was conducted for clinical, biological, and radiological features. Concurrently, cases of IA strongly suspected in French Polynesia, New Caledonia, Mayotte Island, and Reunion Island were retrospectively included in the study as the medical charts were available. Literature search was also performed to complete the data. Descriptive analysis was used for clinical, biological, radiological features and risk factor related to each territory. Results are found in Table 2.

**Geographic distribution**: Concurrently, 440 samples of 9 species (mainly Alectoris亅ulae) were collected between 2014 and 2017 at different locations and periods and examined for carriage of parasites using real-time PCR. Preliminary results are found in Table 2.

**Discussion & Conclusion**

- For the reasons listed above, the 2017 annual report was not elaborated from French Polynesia. ND: not determined
- The first cases of 2017 were statistically acquired from French Polynesia. ND: not determined
- For the first time since 1999, all French overseas territories have been systematically screened for *A. cantonensis* infection
- The disease is now a real public health problem in South America, South Pacific, and French islands in the Pacific
- Appropriate management is needed to control this disease in South America, South Pacific, and French islands in the Pacific
- WHO: "Investigating the distribution of *A. cantonensis* in French Overseas Territories: a geographical survey of the disease in French Overseas Territories" (2019)

**Table 1**: Clinical presentation of cases along the biologic imaging and epidemiological features.

**Table 2**: Results of the environmental study.

**Figure 1**: Life cycle of *A. cantonensis*

**Figure 2**: Geographic distribution of human cases by continent.

**Figure 3**: A. canthensis collected in Martinique.

**Figure 4**: A geographical map of Guadeloupe showing the distribution of the four main sites collected for environmental investigation in 2014 in Basse-Terre, Terre-de-Haut, and Terre-de-Haute.

**Figure 5**: A case of eosinophilic meningitis in Martinique.

**Figure 6**: A geographical map of Guadeloupe showing the distribution of the four main sites collected for environmental investigation in 2014 in Basse-Terre, Terre-de-Haut, and Terre-de-Haute.

**Figure 7**: A geographical map of Martinique showing the distribution of the four main sites collected for environmental investigation in 2014 in Basse-Terre, Terre-de-Haut, and Terre-de-Haute.

**Figure 8**: A geographical map of Martinique showing the distribution of the four main sites collected for environmental investigation in 2014 in Basse-Terre, Terre-de-Haut, and Terre-de-Haute.

**Figure 9**: A case of eosinophilic meningitis in Martinique.