Angiostromyelia due to *A. cantonensis*: first evidence in French West Indies and an up-date in the French overseas territories

**Introduction**

**Angiostromyelia cantonensis**

- *A. cantonensis*: nematode of rat pulmonary artery
- Leading infectious cause of eosinophilic meningitis in humans

**Symptoms:**
- Common: a self-limiting meningitis syndrome
- Severe: neurologic symptoms possible: encephalopathy, diaphragm paralysis, meningoencephalitis with permanent neurologic injury or even death

**Life cycle of *A. cantonensis***

**Geographic distribution**

Due to the presence of *A. cantonensis* in the French overseas territories, the study was performed in 4 regions: Guadeloupe Island, Martinique Island, and New Caledonia

**French overseas territories included in this study**

**Geographical distribution of *A. cantonensis***

- **Guadeloupe Island:**
  - **West Indies:**
  - **Martinique Island:**
  - **New Caledonia:**
  - **French Polynesia:**

**Clinical study**

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

**Material & Methods**

- **Clinical study**: Between 1989 and 2017, all cases of eosinophilic meningitis in French Antilles and French Guiana were investigated using real-time PCR of CSF. A directed search of an antibody, in serum and CSF. Descriptive analysis was conducted for clinical, biological and radiological features.
- **Study area**: AFI strongly involved in French Polynesia, New Caledonia, Mayotte Island, La Réunion Island.
- **Study setting**: Currently, 440 mollusks of 9 species (mainly Achatina fulica snails) were collected between 2014 and 2017 at different locations and periods and analyzed for contamination using real-time PCR. Preliminary results are found in Table 2.

**1. Clinical study**

**1.1. Guadeloupe Island**

- **Description of patients**: In this study, 25 patients were included from Guadeloupe Island.
- **Results and discussion**: Results were presented as n (%) and median (range).

**1.2. Martinique Island**

- **Results and discussion**: The study was performed in 2017 to be compared with the environmental study in 2018 in the Savoie and Guadeloupe territories.

**1.3. New Caledonia**

- **Results and discussion**: The study was performed in 2017 to be compared with the environmental study in 2018 in the Savoie and Guadeloupe territories.

**1.4. French Polynesia**

- **Results and discussion**: The study was performed in 2017 to be compared with the environmental study in 2018 in the Savoie and Guadeloupe territories.

**2. Environmental survey**

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

**Table 2**: Results of the environmental study. The evaluation of the prevalence of *A. cantonensis* in the local mollusk population of French Territories of America is currently underway.

**Discussion & Conclusion**

**3. Study**

- **Reproaches for the first time of human angiostromyelia and environmental presence of *A. cantonensis* in Guadeloupe, Martinique & French Guiana: real emergence in the French Territories of America.
- **Presence of an up-to-date analysis of HAI cases in the Overseas French Territories:***
  - Angiostromyelia is still a major public health problem in Indian Ocean and Pacific Basin
  - The incidence of the disease is strongly increasing in French Polynesia

**Angiostromyelia disease in the French overseas Territories**

- **Risk factors**: children playing in soil and with snails
- adults with FIA syndrome and mental disorders, consumption of tapirs and milk (new shrimp & other marine species) in French Polynesia

- **Still a life threatening disease: sequelae from 0 to 62.5%, mortality from 0 to 25%**

**Angiostromyelia, an emerging public health problem?**

- A zone of one of the most treacherous species worldwide, particularly in the Americas
- Misunderstanding of the disease: probably underestimated prevalence in all French overseas Territories

**Clinical study: The strongly consider angiostromyelia when determining the causes of eosinophilic meningitis in the French overseas Territories, particularly in the Pacific Basin