Aspergillus and aspergillosis in Cambodia
Aspa_day

Aspergillus fumigatus is the most important fungal aerial pathogen in the world. It is responsible for chronic respiratory diseases such as chronic cavitary pulmonary aspergillosis and aspergilloma. No scientific data exists for these diseases in Cambodia. A clinical study was done in three hospitals in Phnom Penh in 2018. Patients with a clinical and/or a radiological suspicion of aspergilloma were included. Medical and socio-anthropologic data, chest X-ray, blood and sputum leftover were collected for each patients. The serum was screened for IgG antibodies with the commercial test Platelia® ELISA. A CT-scan was done for all the serologically positive patients. Eight recombinant proteins (18kd, A97, Cat1, Crf1, Gel1, H41, H70 and Sod1) were also tested by "in house" ELISA. A direct examination and fugal culture were done with the collected sputum. *Aspergillus* strains were identified following molecular-based technique and the Cyp51A gene was amplified to detect mutations. Six hundred twenty six patients were included. Six hundred serum and 471 *Aspergillus* strains were collected. Forty seven CT-Scan were positives for aspergilloma (7.5%) and this result is probably underestimated due for example to the fact that Platelia® ELISA is specific to *A. fumigatus*. Indeed, *A.niger*/*tubingensis* (42.9%) and *A. terreus* clades (14.2%) were also identified in the pathology. Two hundred eighty nine patients had clinical and radiological suspicions of aspergilloma and were negative to tuberculosis. Aspergillosis was confirmed for 11.7% (34/289) patients thanks to Platelia® ELISA but only half of these patients (17) had aspergilloma confirmed with CT-scan. The recombinant protein A97 showed promising result with a relative sensitivity of 72% and a specificity of 93%. Interestingly, the mutation TR34/L98H/T364A was recorded in Cyp51A gene of one *A. fumigatus* strain. Antifungal assay showed this mutation is responsible of a 16 times increase of the minimal inhibitory concentration for itraconazole and thus indicate a high resistance phenotype. The main limitations of this study were the poor quality of the sputum (58% of the sputum below the Murray-Washington class 3) and the high number of patient with unknown tuberculosis status (24.4%). We do hope these first results on aspergilloma diagnosis will help physicians to improve health care of patient and particularly concerning the management of tuberculosis sequelea.