

SEMINAR

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At 14h00 in Administration room of IPC

Aspergillus fumigatus, a major airborne opportunistic fungal pathogen

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SUMMARY

Although they do not convey the miracle attribute “epidemics”, systemic fungal infections are an increasingly significant medical problem in industrialised and developing countries. Humans contract fungal diseases that cause severe damage or kill at least as many people as tuberculosis or malaria. Though fungi infect billions of people every year, their contribution to the global burden is largely underestimated and unrecognized. The four major fungal infections are caused by *Aspergillus*, *Pneumocystis*, *Candida* and *Cryptococcus* species. Major clinical and research priorities are focused on a better understanding of the pathobiology of the diseases as well as an improvement of the diagnosis and antifungal therapies.

Among all mycoses, the incidence of systemic Aspergillosis is rising with the increase in the number of immunocompromised therapies and patients. *Aspergillus* infections are associated with a high mortality rate mainly because of the lack of accurate and speedy diagnostic tests for these infections, but also because current systemic antifungal therapies are not always effective and the physiopathology of the disease remains poorly understood. If *A.fumigatus* is a serious problem among immunocompromised patients, it is now recognised as an opportunistic infectious problem of the future for asthma and COPD patients which will become the third cause of death in 2020.

The purpose of the research of the Aspergillus unit is to better understand the biology of the human opportunistic fungal pathogen *Aspergillus fumigatus* through genetic, biochemical and immunological approaches. Studies are concentrated on the biosynthesis of the cell wall and associated extracellular matrix and the role of the components of these fungal structures during the fungal development in the immunocompetent and immunocompromised host. During my talk, I will review the general health problems caused by fungal infections and will also present the research undertaken in my laboratory on several aspects of the pathobiology of aspergillosis.