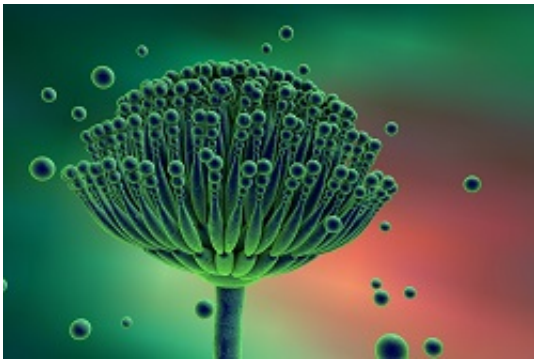


Radioactively labelled antibodies to help detect invasive pulmonary aspergillosis

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The EU MATHIAS project has developed a new clinical imaging method that could enable doctors to tackle one of the main killers of patients with a weakened immune system.

The new test involves attaching radioactively labelled antibodies to the infecting structures formed by the fungus *Aspergillus fumigatus* that is the primary cause of invasive pulmonary aspergillosis.

At present, a definitive diagnosis for the disease is only obtained at autopsy or relies heavily on an invasive biopsy, an extremely unpleasant procedure that involves the taking of tissue samples or fluid from a patient's lungs, which is not always applicable in suffering [patients](#).

By using radioactively labelled antibodies in the new imaging method, clinicians are able to clearly see the growing fungus. The project researchers used a combination of PET and MRI imaging, diagnostic tools that are available in most hospitals, to identify the disease and to rule out lung infections caused by other pathogens, such as bacteria or viruses.

This would then allow for the application of the correct therapy at a dose and duration tailored exactly to the patient's specific needs, taking into account factors such as the severity of the infection and the patient's underlying condition.

A major risk to immunocompromised patients

The spores of the *Aspergillus fumigatus* fungus are miniscule, can be found in the air of most environments and are inhaled by humans every day. They do not usually cause a problem for healthy individuals, as their [immune system](#) will identify and destroy any inhaled spores before they are able to grow and infect the body.

However, in patients who have a weakened immune system, due to leukaemia, [bone marrow transplants](#) or other conditions, the fungus encounters very little resistance as it settles in the lungs, leading to the development of the condition.

As such, this infectious rare disease is one of the common causes of death in immunocompromised patients and exerts a tremendous cost on European healthcare systems. It is estimated that up to 200, 000 people globally die from the infection.

Next steps

The [new test](#) is a concrete stepping stone for the project's ambition to

develop a convenient, fast and specific diagnosis of the disease that promises to significantly increase survival rates, as well as provide considerable financial savings for clinics and European healthcare systems overall.

The project, which will run until 2018, is also working on developing new treatment options which can replace the systemic antifungal drugs that are currently administered to patients but are known to provoke severe side effects.

A small-scale clinical trial will then be undertaken in Germany, in full compliance with the Declaration of Helsinki on Good Clinical Practice and relevant EU and German clinical trial regulations.

More information: For more information please see MATHIAS project website: www.mathias-imaging.eu/index.php

Provided by CORDIS

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