

Fungiscope

Global Rare Fungal Infection Registry

Under the auspices of

Protocol Version 3.8

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Further co-ordinators are cordially invited to contribute to the success of FungiScope.

Introduction

The incidence of invasive fungal infections is increasing in all parts of the world. The etiology for this ongoing epidemiological development is not completely understood. However, major contributing factors are the increasing number of transplantation procedures undertaken around the world (estimated at 500,000 per year), a widening of the indications for intensive chemotherapy, and the growing number of other clinical conditions requiring immunosuppressive treatment.

Therapeutic standards have been developed for the most frequent invasive fungal infections, i.e. candidiasis, aspergillosis and cryptococcosis. But, the so called “rare fungi” are also a reason for the increased number of invasive fungal infections. Thus clinicians are now facing infections due to a variety of different fungi without any reliable treatment recommendations. Therapeutic decision making is not evidence based.

This study will collect clinical data related to cases of filamentous fungi, especially zygomycosis, fusariosis and other less common infections caused by, e.g. *Scedosporium*, *Penicillium*, *Acremonium*, *Paecilomyces*, *Trichoderma*, and any other rare fungi, including dematiaceous fungi such as *Alternaria sp.*, *Aureobasidium sp.*, *Bipolaris sp.*, *Cladophialophora sp.*, *Cladosporium sp.*, *Curvularia sp.*, *Exophiala sp.*, and *Phialophora sp.*, and rare yeasts, e.g. *Trichosporon sp.* .

Objectives

The objective is to broaden the knowledge on epidemiology, diagnostic procedures and the clinical course of invasive fungal infections caused by unusual filamentous fungi.

The specific objectives are:

1. To determine the fungal species causing invasive fungal infection in different parts of the world.
2. To determine the clinical pattern of disease and document procedures performed for confirmation of the diagnosis.
3. To describe the therapeutic regimens used and their efficacy.
4. To share clinical isolates among the contributors of Fungiscope.
5. To develop molecular biology tools for identification of strains in histopathologically proven invasive fungal infection.

Study period

Start date: January 1, 2006

Patient definition

Inclusion criteria.

- Cultural, histopathological, antigen, or DNA evidence of invasive fungal infection

Exclusion criteria.

- Infection due to *Aspergillus spp.*, *Candida spp.*, *Cryptococcus neoformans*, *Pneumocystis jiroveci*
- Any endemic fungal infection such as coccidioidomycosis or histoplasmosis
- Colonisation or other non-invasive infection

In case of any uncertainty whether a specific patient can be included, please contact the chair.

Case report from

- The CRF is an internet based form accessed through the following websites: www.fungiscope.net. There the study protocol as well as the full CRF (pdf Version) is available.

- Risk factors

room conditions, i.e. laminar air flow, HEPA filter use, exposition to construction work/dust [including the option: undetermined], status of the underlying condition at onset of IFI, neutropenia, mucositis grade 3-4 (CTC), diabetes mellitus, central venous catheter, total parenteral nutrition, chemotherapy, high dose cytosine arabinoside, radiotherapy, steroids (dose and duration), anti TNF- α , alemtuzumab, rituximab, purine analogues, number of antibiotics, and number of days with antibiotics, previous antifungal prophylaxis, other.

- Demographic data, underlying condition and its current status
- Number of institution's hospital admissions during the last year
- Fungal species, organs involved
- Antifungals and other treatment modalities, treatment results of IFI
- Survival 4 and 12 weeks post treatment cessation or cause of death, and results of post mortem examination [as query issued from the data base].
- Registration in any other trial or registry. Can still be registered with *Fungiscope*, however, repetitive publication will be avoided or disclaimed.

Data analysis

The evaluation will be descriptive, by causative organism. Diagnostic approach and response to therapy will be compared by fungal disease. For differences between

subgroups χ^2 -test or exact test of Fisher will be used with a $p < 0.05$ as limit for statistical significance, with a Bonferroni correction for multiple comparisons.

Strain collection/*Fungithek*

Isolates will be sent to and stored by the reference laboratories, where formal identification will be done based on culture and molecular biology results.

Susceptibility patterns/MIC according to CLSI and/or EUCAST methods/MFC of the isolates will be done.

Tissue collection

Every effort should be made to obtain tissue samples. If fresh frozen tissue is not available, 10 slices of formaldehyde fixated tissue should be obtained.

Budgetary information

For evaluable patient documentations filled in by the participating center a compensation of € 100 each will be paid. If the documentation workload is too high, centers are encouraged to ask the study office for personnel to be sent to the site.

For isolates made available to the central laboratory an additional € 50 will be paid.

Authorship

It is intended to publish each subset of this cohort at a time. Authorship will be restricted to those centers contributing patients or translational work to the subset published. From each contribution center there will be authorship positions available. This will extend to a maximum of three: one clinician, one microbiologist/medical mycologist, and one pathologist, if applicable.

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