The incidence of invasive fungal infections (IFI) is increasing worldwide. While the etiology of this development has not been completely understood, evermore invasive medical care as well as increasing numbers of long-term immunocompromised patients are considered major contributing factors. A wide variety of so-called “emerging fungi” accounts for a significant proportion of IFI. Data on their epidemiology, pathogen biology and clinical course is scarce, often impeding evidence-guided decision making in the clinical setting.

To overcome these difficulties and eventually improve patient care, FungiScope™ – Global Emerging Fungal Infection Registry has been created in 2003.

FungiScope™ – Global Emerging Fungal Infection Registry

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Background

The registry is open to everybody wishing to contribute a case of an emerging fungal Mortality due to IFI
Favourable outcome

Supported by unrestricted grants from Astellas Pharma, Gilead Sciences, MSD/Merck, and Pfizer Pharma GmbH

Methods

✓ Filing patient data in an online database
✓ Epidemiological survey on the incidence of emerging fungal infections
✓ FungiThek: Biobanking and reference analysis of cultured isolates and tissue samples, as well as exchange with other centers for research projects
✓ FungiQuest: A search engine of the FungiScope database
✓ Therapeutic antifungal drug monitoring
✓ Inclusion criteria: Cultural, histopathological, antigen or molecular biologic evidence of IFI
✓ Exclusion criteria: Colonization or infections due to Aspergillus spp., Candida spp., Cryptococcus neoformans, Pneumocystis jiroveci and any endemic fungal infection
✓ The registry is open to everybody wishing to contribute a case of an emerging fungal infection

Conclusions

✓ Increasing relevance of rare IFI
✓ Efficient method: 379 cases of rare IFI from Europe, North and South America, and Asia have been documented
✓ Increasing annual case numbers

Goals

✓ Publication of a comprehensive analysis on rare yeasts
✓ Publication of a comparison between sequencing and morphological results for the first 100 FungiThek isolates
✓ Further improvement of the FungiQuest platform

Results

Figure 2: Annual case documentation is steadily increasing

Figure 4: Distribution of Pathogens
From January 2003 – July 2014, 379 cases have been documented and considered valid - Mucormycota are the most commonly registered pathogens followed by Fusarium spp. and yeasts.

Figure 5: Outcome for the four most common pathogens
Outcome is poor for most infections with emerging fungi with the exception of IFI due to Dematiaceae.

Figure 6: Risk factors and site of infection for the four most common pathogens
Chemotherapy is the most important risk factor for most fungal except for Dematiaceae. The most common sites of infection vary greatly between the different fungi. Only the more common sites (> 10%) are shown.

Figure 1: Project overview

In cooperation with:

A working group of:

FungiThek

www.fungiquest.net

Diagnosis of IFI with rare fungi

Registration and Password Acquisition

register@fungiscope.net

Electronic Case Report Form

FungiQuest

www.fungiquest.net

Search the database

References

This three top contributing countries are Germany, India, and the Czech Republic.

Yeasts (n = 51)

Dematiaceae (n = 43)