European Confederation of Medical Mycology

Confédération Européenne de Mycologie Médicale

ECMM Travel awards

ECMM travel awardees X National Conference of SIHAM, Coimbatore, India, 10-12 January 2014

Congratulations to the award winners!

The award will be presented at the SIHAM conference Inauguration function on 9th January 2014

ECMM TRAVEL AWARDEES
SIHAM 2014, COIMBATORE, INDIA

Selection criteria: *The selection of the ECMM travel award grantees was performed by considering a series of criteria, including the age of the candidates, their scientific career based on the submitted cv-s, the number and quality of their publications as well as the topic and quality of the submitted abstracts. Although all applications were valuable and worth for support, the availability of the travel grants is limited, therefore the international evaluation committee had to select the following 5 successful applicants:*

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Abstract Title: Microsatellite typing and antifungal susceptibility profiling of Clinical and Environmental Cryptococcus neoformans var grubii isolates from India

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Objective: Cryptococcus neoformans is an opportunistic basidiomycete yeast that causes meningitis in immunocompromised patients. Here we report the genetic analysis by using microsatellite typing and antifungal susceptibility profile of a large collection of C. neoformans isolates from clinical and environmental sources.

Materials and Methods: A total of 453 (229 clinical and 224 environmental) Indian Cryptococcus neoformans isolates were subjected to Amplified Fragment Length Polymorphism (AFLP) and genotyped by microsatellite typing based on nine markers specific for C. neoformans variety grubii (serotype A) or variety neoformans (serotype D). The antifungal susceptibility was determined for standard antifungals using CLSI M27-A3 guidelines.

Results: All of the 453 isolates were AFLP1/VNI, genotype representing C. neoformans variety grubii, serotype A. Microsatellite typing revealed that the majority of isolates belonged to microsatellite cluster (MC) MC3 (n=183; 40.4%), followed by MC1 (n=160; 35.2%), MC2 (n=24; 5.2%), MC13 (n=19; 4.1%), MC22 (n=7; 1.5%), and others (8 MCs, n=20; 4.4%). Forty (9.2%) isolates could not be linked to a known MC from previous studies. MIC90 of AMB, FC, FLU, ITC, VRC, POS and ISA were 1, 16, 8, 0.25, 0.125, 0.25, and 0.06 mg/L, respectively. Data on the geometric mean of MICs revealed that MC1 was significantly less ($P<0.0001$) susceptible than MC3 to ITC, ISA, FC and AMB ($P=0.002$).

Conclusions: The present study reports the largest series of C. neoformans var. grubii from Asia. Environmental isolates showed more genetically diverse population than clinical isolates comprising large number of MC type than clinical. Two microsatellite types of C. neoformans var. grubii dominate in India and were uniformly distributed over clinical and environmental isolates. Fluconazole and flucytosine had high MICs (> 8 mg/L) in 2% and 7% of the isolates respectively, whereas the new azole isavuconazole exhibited the lowest GM MIC of 0.06 mg/L for all the isolates.

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Abstract Title: Screening of invasive fungal infections by a Real Time Panfungal (PAN-ACF) PCR assay in patients with haematological malignancy

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Invasive fungal infection (IFI) is a fatal infection in Haematology patients. There is an urgent need for reliable screening methods facilitating timely diagnosis and treatment. A real time pan fungal PCR assay based on Taq Man technology targeting 18 S ribosomal RNA gene was used to screen whole blood specimen obtained from series of Haematology malignancy patients for IFIs. The pan fungal (Pan-ACF) assay was employed to investigate specimen from 133 patients in duplicate with suspected IFI. In addition 20 healthy subjects and 20 patients with bacterial infections were taken as control. The patients with suspected IFI were also diagnosed by conventional methods including direct microscopy, culture techniques and antigen detection.

The results of molecular testing were evaluated in relation to the revised criteria proposed by EORTC and patients were classified as having proven and probable IFD. Of 133 patients, 89 had proven, 18 had probable and 26 had possible IFI. One-hundred-four samples were RT-PCR positive. Of 89 proven cases, 84 were panfungal PCR positive. These 84 cases included 82 cases which revealed growth on fungal blood culture and two cases were negative on fungal blood culture. Of the 82 cases which revealed growth on culture: 74 grew Candida in culture, 3 grew Fusarium solani, 5 grew Aspergillus species on blood culture (galactomannan antigen positive). The 5 specimen which were negative on pan fungal PCR, 2 grew T. ashaii. 1 grew C. rugosa, and 2 grew as C. neoformans var. neoformans. Of the 18 probable cases, 18 were panfungal PCR positive. These were also galactomannan antigen positive. The sensitivity, specificity, positive predictive value and negative predictive value of pan fungal PCR in proven cases was 94.3%, 95.2%, 97.6% and 88.9%, respectively.

The pan fungal (Pan-ACF) real-time PCR assay can detect common fungal genera and it may be used as an adjunct to conventional methods for screening of invasive fungal infection.

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Abstract Title: Phaeohyphomycosis caused by Chaetomium bostrychodes and Onychomycosis Chaetomium globosum in Madhya Pradesh (M.P.) Central India: A Report of Two Cases

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Members of the fungal genus Chaetomium usually colonize cellulose-containing plant remains but on rare occasions may cause opportunistic mycoses and cutaneous infection in otherwise healthy individuals. In this paper we present two cases in which Chaetomium spp. can be clearly identified as an aetiological agent in pathological conditions. In the first report, we describe a new aetiological agent, Chaetomium bostrychodes superficial pheohyphpmycosis and the second case involved onychomycosis with strikingly yellow nail discoloration due to Chaetomium globosum in an otherwise healthy patient recorded in Madhya Pradesh (M.P.) Central India. The etiologic significance of the fungus was confirmed by its culture, histopathology and repeated isolation at different times.

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Abstract Title: Insight into DNA extraction of Candida sp: Comparison of an automated & a manual system

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Aim: Evaluate the efficacy of DNA extraction using two systems.

Method: Both the methods were performed using Qiagen DNA Mini extraction kit. For automated DNA extraction, Qiacube (Qiagen), was used. Enzymatic lysis using lyticase (Sigma Aldrich) was carried out. Comparisons were made in terms of yield obtained and purity of the yield (using Thermo Scientific Nanodrop). Efficiency of extraction of the obtained product was checked in real time PCR (Rotorgene Q). Cycle threshold value obtained for the products in real-time PCR were compared. The Candida species used for the test were Candida albicans, Candida parapsilosis, Candida tropicalis, Candida famata, and Candida dubliniensis.

Research: The results for the yield and purity obtained from both the methods were comparable. In terms of purity the 260/280 ratio were comparable whereas the 260/230 ratio showed some variation. Cycle threshold value in real-time PCR also showed similar values. Predesigned primers and probes (designed in lab) were used in the Real time PCR assay.

Conclusion: No significant difference in manual and automated extraction using Qiacube for a members of Candida sp were seen. The methods gave similar results in DNA yield and purity. Also, real-time amplification gave comparable values despite a difference in 260/230 ratio.

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Abstract Title: Mycological profile of fungal rhino sinusitis from a tertiary care Hospital

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Purpose: The frequency of fungal rhino sinusitis (FRS) is increasing andcommon and uncommon fungi isolated from India and other countries. Aims&Objective: The objective of this study was to find out fungal pathogens from clinically suspected cases of fungal FRS, find out underlying causes &the outcome of patients Materials and Methods: Duration of the study period was from August 2012to Oct. 2013. Biopsies were collected from the nose and paranasal sinuses of all clinically and radiologic ally diagnosed cases of fungal rhino sinusitis. After initial screening by 10% potassium hydroxide, specimens were processed by standard Mycological techniques.

Results: A total of 31cases, fungal etiology was confirmed in 11 cases(35.48%) , the commonest isolate was Rhizopus (5), followed by Aspergillus flavus (3), Syncephalastrum racemosum (1), other Aspergillus sp. (1), Unidentified Mucorale (1) & (1) Paecelomyces sp. Underlying cause in all 11 cases was Diabetes mellitus. One patient who presented as acute FRS died, 9were chronic invasive&1was case of granuloma; prognosis was good in 10 cases.Left side sinus involvement was present in 7patients (63.33%), bilateral involvement & right sided involvement was present in 2 patients each. The commonest signs &symptom were nasal obstruction, swelling of eye(41.66% each), Headache(25%),watering of eye,epitaxis(16.16% each).one patient was unconsciouswho died & one presented with discharging sinus due to A.flavuswhich is rare finding

Conclusion: Apart from the common causes, unusual fungal pathogens were isolated from cases of rhino sinusitis & prognosis was good with AmphotericinB