Methods Biofilm formation was determined by inoculating each strain of yeast species into a glass tube containing Sabouraud Dex-trose Broth and other glass tube containing Brain Heart Infusion. Tubes were incubated at 37°C for 24–48 h without agitation. After incubation, the culture broth in the tube was aspirated and the tubes were washed once with distilled water. The walls of the tubes were stained with safranin after media and yeast cells were discarded. Hemolysin production was evaluated using a plate assay. Each strain of yeast species was inoculated on a Sabouraud dextrose agar supple-mented with 5% sheep blood. The plates were incubated at 37°C for 48 h. The presence of a distinct translucent halo around the inocu-lums site, viewed with transmitted light, indicated positive hemolytic activity. Results. 228 isolates were obtained from leukemia, cancer, tuberculosis, fibrinocytic disease of breast, meningocoele and Fallot’s tetralogy patients. The isolates were cultured from urine (n = 108) and respiratory specimens (n = 120). The yeast strains including 112 Candida albicans, 44 C. tropicalis, 21 C. parapsilosis, 11 C. glabrata, 10 C. lusitaniae, 6 Trichosporon malti and 4 C. krusei. A total of 132 (57.9%) of 228 yeast species isolates obtained were biofilm positive. Biofilm production was most frequently observed for isolates of C. krusei (100%), 4 of 4; C. tropicalis (91.2%, 41 of 44); T. malti (83%, 5 of 6); and C. parapsilosis (71.4%, 15 of 21). At 48 h postinoculation, alpha hemolysis and beta hemolysis could be observed circumscrib-ing the yeast colony. A total of 153 (67.3%) of 228 yeast species iso-lat es obtained produced hemolytic activity. Hemolysin production was most frequently observed for isolates of C. krusei, C. parapsilosis, C. glabrata and C. tropicalis.

Conclusions Even though non-albicans species are considered less invasive and virulent than C. albicans, some species are inherently less susceptible to common antifungals and some species such as trop-icalis, glabrata and parapsilosis, have the ability to produce biofilm and hemolysins as components of fungal virulence and cause disruption of host cell membranes.

Galactomannan antigen detection as a biomarker for invasive mycosis in immunosuppressed pediatric host

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Dissociated mucormycosis in a 6 month old infant following congenital heart defect corrective surgery: Case report

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Objective (Introduction) Invasive fungal infections in children are becoming more frequent primarily due to an increased survival of children with primary or secondary immune deficiencies. Although uncommon, mucormycosis has been increasingly identified among immunocompromised patients and carries a high fatality rate. There are several risk factors specially related to an immunodeficiency state such as hematologic malignancy with prolonged neutropenia and bone marrow or solid organ transplanta-nt, illustrating the role of phago-cytic capacity as well as cellular immunity in the prevention of mucosa and tissue invasion.

Methods (Clinical case) A 6 month old infant was admitted to our intensive care unit due to central cyanosis and heart failure. He had past history of prematurity (35 week and 6 days), neonatal cholestas-is, atrial dysplasia with multilocal atrial tachycardia, right ventricle hypoplasia with ventricular tachycardia and inferior vena cava interrup-tion with continuity to superior vena cava through aegygos. He was submitted to medical and surgical correction and was on mechanical ventilation and central venous catheterization. During hospital stay he suffered from several nosocomial infections treated with large spectrum antibiotics. On day 48 he was diagnosed with sepsis. A Rhizomucor pusillus was isolated from urine and 4 days later it was also detected from several tracheal aspirates. Due to his clini-cal condition, tissue biopsy was not an option. He was treated with liposomal amphotericin B for 40 days. Caspofungin was added for 27 days. Also vesical irrigations with amphotericin B deoxycholate was done as initial therapy. He was on peritoneal dialysis because of acute renal injury AKIN (Acute Kidney Injury Network) III. Immunological study revealed decreased lymphocyte absolute num-ber, mainly due to CD8 subpopulation. Renal echography showed 2 mm bilateral nodules suggestive of fungal etiology. He was extu-bated on day 90 with success. Due to clinical recovery but persis-tence of dialysis dependence, he was transferred to pediatric nephrology unit after 122 days.