Mona Mohiedden et al., J Infect Dis Ther 2016, 4:5(Suppl)
http://dx.doi.org/10.4172/2332-0877.C1.011

Identification and differentiation of the most clinically involved *Candida* species in neonates with candidemia admitted to NICU in Cairo University Specialized Pediatric Hospital (CUSPH)

Mona Mohiedden and **Heba Abo Hussein**
Cairo University, Egypt

Background: Candidemia studies have documented geographic differences in rates and epidemiology. Although *Candida albicans* continues to be the most common and virulent cause of *Candida* blood stream infection (BSI), longitudinal studies have detected an increase in the incidence of BSI caused by other *Candida* species that are known to be inherently less susceptible to commonly used antifungal drugs.

Study Question: Is to investigate the new trend of neonatal candidemia due to most commonly encountered *Candida* species using simple and reliable technique.

Methods: Blood cultures were performed in BACTEC instrument for 107 neonates admitted to Neonatal Intensive Care Unit, Cairo University Specialized Pediatric Hospital (CUSPH). All study population was suffering from prolonged hospitalization with fever of unknown origin, inadequate antibiotic response for at least one week. Detection of candidemia and species identification of isolates was performed according to its standard protocol. All blood culture bottles of the *Candida* isolates and bottles that did not flag positive and gives negative subculture on Sabaraud dextrose agar (SDA) and sheep blood agar (SBA) 5th day of incubation in BACTEC instrument were further identified and differentiated using PCR technique. The non-systematic collection and storage of samples were a limitation of our study.

Results: 98 (91.6%) out of 107 studied cases were culture positive for fungus. 90 of these cases (91.8%) were PCR positive, while 8 cases (8.16%) were not identified by PCR. The agreement between the two techniques was 0.229 (P value=0.017). The designated inner primers for the given *Candida* species identified all 96 cases to species level were 70/107 (65.4%) as *Candida albicans*, 14/107 (13.1%) as *Candida tropicalis*, 12/107 (11.2 %) as *Candida glabrata*. All cases that showed positive Germ tube test 45/98 (45.9%) were confirmed as *Candida albicans* by PCR. There was no statistically significant difference between identified *Candida* species in the present study regarding clinical diagnosis or demographic criteria.

Conclusions: Notably we have performed a reliable technique for comprehensive identification of clinically relevant *Candida* isolates and ascertained significant data on many technical points including; specimen type, time and storage conditions. Performing a study for evaluation of the effect of different blood fractions on the reproducibility of PCR results for diagnosis of candidemia is recommended.

Public Health Implications: PCR technique is more specific and rapid than conventional culture method. Moreover, the improved detection and discrimination between infecting *Candida* species is additional advantage information that is crucial for initiating specific antifungal therapy.

Biography

Prof. Dr. Mona Mohiedden Abdel Halim completed her PhD at the age of 31 years from Faculty of medicine-Cairo University. She completed her postdoctoral studies in clinical microbiology from Cairo University School of Medicine. Currently, she is the director of microbiology unit of the main laboratory of Cairo University Specialized, pediatric hospital (CUSPH). She is also leader of infection control of same CUSPH hospital since about 8 years. Dr. Mona has published more than 20 papers in the field of microbiology and infection control in reputed journals and attended more than 30 national and international conferences and workshops in field of microbiology and infection control as speaker, organizer and poster presenter. She is member of various Professional Associations..

- National: Member of ESLM
- International: Associate member of international federation of infection Control.
- Reviewer in some scientific journals

mmohiedden@yahoo.com