

SYSTEMIC CANDIDA INFECTION AT KING ABDUL AZIZ UNIVERSITY HOSPITAL JEDDAH.

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Candida infection in hospitalized patient is increasing significantly over the last 10 years. Particularly in the patients in the Intensive Care Unit who have invasive monitoring lines. Candida infection leading to prolonged hospitalization and significant mortality which dictate the need to take all the possible measures to present this infection particularly at the high risk patients. We study 15 cases which developed this type of infection in King Abdulaziz University, Jeddah over 5 years period aiming at identifying the risk factor of candida infection in our patients with particular attention to the patient with high mortality, in turn we suggest the universal preventive measures for patients at risk of infection and additional prophylactic treatment for the patients at lethal risk.

Key words: Candida, systemic, risk factors, preventive measures, intensive care unit.

INTRODUCTION

Candida infection can be a superficial local infection or serious infection when becomes systemic infection. On the last 10 years the rate of candida infection increased significantly which prolonged the hospitalization and increased the mortality; Different species of candida have been isolated. 1/3 of them are species other than *C. albicans* (1) The presence of the different species and the resistance to antifungal agents make the treatment a difficult task which dictate the need for the prevention of the infection particularly in the high risk patient in the I.C.U. with the invasive monitoring lines, and patients with multiple or prolonged use of broad spectrum antibiotics therapy (1-4).

Our aim is to study the 15 cases of systemic candidial infection diagnosed in our hospital "King Abdulaziz University Hospital" over 5 years to outline the risk of candida infection in our patient and to identify the patients with expected high mortality and to suggest the preventive measures for the infection and early prophylactic measures in the patients of the high mortality.

PATIENTS AND METHODS

This study includes 15 patients with confirmed diagnosis of systemic candidiasis seen at King Abdulaziz University Hospital over 5 years period from 1991 - 1995. The youngest patient was 20 day and the oldest was 25 years. Three of them were premature, 13 were below 12 years, 8 of them were below one year. Ten are males and 5 are females.

Material sent for examination of the candida includes the blood and urine sample from all the patients and the tip of the invasive catheters and some other body fluids. (Gastric aspirate, wound discharge, & sputum plural aspirate) from some patients as applicable. Three patients were on chemotherapy, 2 of them for acute lymphocytic leukaemia and one for fibrosarcoma. One patient was on steroid therapy. All of them were on combination antibiotics treatment (3 or more) for minimum 10 days and maximum period of 44 days. Eleven patients received systemic antifungal treatment with amphotracin B (9 patients) or Daktarin (2 patients).

RESULTS

Blood samples of all patients and urine sample of 9 patients, catheter tips from 4 patients, sputums from 4 patients, gastric aspirate from 3 patients, wound swabs from 2 patients, ear discharge from 2 patients, endotracheal tube tip from 5 patients, plural aspirate from 1 patient, all were positive from the candida infection. Fourteen patients were infected with candida albicans and one patient with candida parapsilosis.

Three patients died out of the 15 patients (20%), 2 of them premature and one is 3 years old with acute lymphocytic leukaemia under cytotoxic therapy, all of them were male, infected with candida albicans, in I.C.U. having multiple invasive monitoring lines, receiving multiple antibiotic therapy, and were treated with amphotericin B after diagnosis of the infection and not prophylactically.

DISCUSSION

The superficial local candida infection is common and easy to treat but the invasive systemic infection is infrequent as experienced in our hospital and reported by others where an average of three cases per year were diagnosed with this infection. In spite of this infrequency it was observed that there is increasing incidence over the last 10 years⁽¹⁾ which could be related to the increased intensive care services with its invasive monitoring lines and the prolonged use of antibiotics in such type of patients and also it could be related to the original underlying disease of those patients which involve the immune system of those patients as primary immune deficiency or secondary suppression of the immune system by the use of the cytotoxic therapy. Once the patient had this systemic infection it is difficult to treat with increased hospitalisation and mortality considerably⁽¹⁻³⁾ The difficulty in treating those patients is related on one hand to the general condition of the patient as most of them they are I.C.U. type of patients and on the other hand the resistance to the antifungal treatment⁽¹⁻²⁾, and the various types of the fungi with the variability of the outcome kataoka study showed that the infection with the candida parapsilosis has better outcome than the candida albicans⁽⁶⁾, one of our patients was infected with candida parapsilosis and recovered on the antifungal treatment.

Patients at high risk of candida infection include I.C.U. patients with the invasive lines of monitoring and invasive catheters (ETT, NGT, & Drainage tubes), patients on broad spectrum antibiotics, premature, and old aged patients, but our experience and others indicated that the prematurely and the old age and immune suppressed patients are at higher lethal risk than other patients^(1-3,6,7). We suggest that patient with high risk of infection to be

protected by applying the universal preventive precaution on the patients and the medical care providers during the application of the invasive monitoring lines and catheters. This policy was stressed by many reports⁽¹⁻³⁾ as it was found that the candida infection occurred by both endogenous and exogenous source as the candida isolated from the hands of the I.C.U. staff⁽¹⁾. This group of patient should receive the antifungal treatment when the diagnosis of the candida infection is confirmed. While on the other hand, the patients with the high lethal risk should receive in addition to the preventive precaution the prophylactic antifungal treatment to minimize the mortality among them.

Early diagnosis is of paramount importance in the outcome. Several reports indicated the importance of some of the test which can diagnose the infection earlier than the blood culture such as the serum antifungal antibodies which should be used for the high risk patients in the I.C.U. with the multiple invasive lines with immunity suppression. Klingspor et al study showed that the antibody testing may be used to diagnose systemic candida infection in children and to follow the progression and resolution of systemic candida infection with the rise and fall of antibody titre^(4,5).

CONCLUSION

Systemic candida infection is uncommon, but showing an increasing incidence in the last 10 years which prolong the hospitalization of the patients and carried high mortality which deserve early diagnostic method with the detection of antifungal antibody and particular preventive measures particularly in the patients with the high risk of infections. Additional prophylactic measures should be applied in the patient with expected high mortality, such as the premature old patients and immune compromise patient on intensive care monitoring.

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