FUNGAL INFECTIONS IN ACUTE BURN INJURIES - CAIRO UNIVERSITY BURN CENTER EXPERIENCE (232)

*Badawi D.1

1 Cairo University, Plastic Surgery, Cairo, Egypt

Introduction: Despite significant advances in burn care, infection still remains one of the major causes of morbidity and mortality in burn patients (1). Some studies showed decreased contribution of “classical pathogens”, like Staphylococcus aureus, with emerging prevalence of unusual pathogens, like Enterobacter. (2). In this study, our purpose is to focus on the frequency and the impact of fungal infection in patients with acute minor burns.

Methods: This study included 50 patients who were admitted in the Burn Unit in Kasr Elelny teaching hospitals -Cairo University from March 2013 to June 2013, suffering various forms of acute burn injuries.

On day 4, surface swabs were taken from all patients included and each burn wound was labeled individually. The swabs were submitted to culture and sensitivity. Antibiotic sensitivity of fungi could not be done due to technical problems. Patients received antibiotics according to sensitivity for 4 days. The process of wound swab culture was repeated for every burn wound on weekly basis till patient discharge to home (3-6 weeks)

For wounds showing positive fungal growth, the policy of treatment changed as follows:

- Superficial partial-thickness burn wounds originally managed by repeated dressings only (Group A):
  Adding Nystatin containing cream and re-evaluate on weekly basis.
- Deep partial and full thickness burn wounds: originally managed by surgical excision and coverage by split thickness grafts in whom wounds showed failure of graft take due to wound infection (Group B):

The wounds were dressed as Group A and re-evaluated on weekly basis. When the wounds became clean, we proceeded to re-coverage by split thickness graft.

Results: The total number of burn wounds that were dealt with in the study 118 burn wounds in different body parts.

The frequency of fungal isolates was higher in deep partial and full thickness wound than superficial wounds. It also increased steadily during the hospital stay. Fig 1

The majority of cases were due to Candida spp. (85%), followed by Aspergillus spp. (10%) with only (5%) due to Rhizopus spp. And Mucor spp.

Response to medical and surgical treatment:

- Group A wounds = 23 wounds. After adding Nystatin containing cream and increasing the rate of wound dressing, the fungal cultures were negative in the following week (100%).Fig.2
- Group B wounds = 63 wounds. 48 wounds were grafted after 7 days (76.2%), and 15 were grafted after 14 days (23.8%).

Conclusion: In this study, we focussed on modern aspects of the epidemiology, diagnosis, management, and prevention of burn wound fungal infections. Nosocomial transmission contribute to the origin of the fungi contaminating the burn wounds. Routine surveillance surface swab cultures for burn wounds are conclusive for early detection of wound infection. We agree with Church et al (3) that fungal burn wound infections are most commonly due to Candida spp. and Aspergillus spp.

The diagnosis of fungal burn wound infection by itself does not validate the start of systemic antifungal therapy in burned patients. It may be well controlled by local measures. Close monitoring should be maintained for early detection of systemic dissemination of fungal infection.

References: