

Diagnosis of Fungi Associated with Wounds from Lying Patients at Al-Hussein Teaching Hospital in Dhi Qar Governorate

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Abstract

About 30 samples were collected from burn areas from patients attending Al-Hussein Teaching Hospital in Dhi Qar governorate for the period between 2-4 for the year 2020. 7 types of fungi and yeasts, represented by the following fungi, have been isolated candida kruzei, candida tropicalis, and Rhizopus, candida albican, candida glabrata, *Aspergillus* spp, rhodotorella. The results showed that *Aspergillus* spp. Was dominant over the rest of the fungi, with a rate of 36.36% over the rest of the fungi species, while *candida albican* yeast appeared with a frequency of 28.18% compared to the rest of the other fungi, and the rate of appearance of other fungi was about 12-3% compared to the rest of the other fungi. The fungi were distinguished by the fact that they are all of the opportunistic type, which begins to infect the body when there is a weakening of immunity or infection with the associated burns and ulcers.

Keywords: *fungi. Aspergillus. Wounds. Lying patients. Rhodotorella*

Introduction

Hundreds of people suffer daily burns of various types, ranging from moderate to light burns, blind burns, or so-called third-degree burns ⁽¹⁾. Burns are usually contaminated with a group of microorganisms, all of which are classified as opportunistic organisms, and fungi are the largest part of those organisms that are isolated and diagnosed according to the methods known to them. ⁽²⁾ Fungi have the advantage of being opportunistic organisms that may cause the occurrence of many diseases in humans, especially in people with burns and people with weak immunity⁽³⁾..

Materials and working Methods

1-Samples collection: About 30 samples were collected from burn patients who are hospitalized at Al-Hussein Teaching Hospital in Dhi Qar governorate during the period between 2 months to 3 months of 2020. Samples were taken from the wounds of patients with burns, using the swab, and the required studies were conducted on them.

2-Diagnose Microscopy: For the purpose of performing the microscopic examination, glass slides were prepared for the purpose of preparing a smear for microscopic examination from the fungal culture, which included placing a drop of lactophenol dye on the glass slide with mixing part of the colony on it and placing the glass cover. The slides were examined under a microscope to determine the fungal species and genera. Through the following equation, the most

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frequent fungi were identified in the isolated samples:.

The number of candida fungus isolates

$$\text{Percentage Impression} = \frac{\text{The number of candida fungus isolates}}{\text{The number of total fungi isolates}} \times 100\%$$

The number of total fungi isolates

3-Diagnosis of fungi: The classification keys were used for the purpose of diagnosing the fungi, in addition to using the phenotypic diagnosis to enhance the identification of the fungus type and the sex, according to Maroud in ⁽⁴⁾).

: 4-Cultivation media

A-Medium saproid acar: prepared by adding 40 g of dextrose sugar to 15 g of peptone, 20 g of acar-acar and 1000 ml of distilled water. Sterilize the medium in the autoclave for a period of a third hour under pressure of 121 lb / inch. According to the manufacturer’s instructions.

B- Acromo-gen agar

The medium of chromoa used the diagnostic gene for Candida yeast which was prepared according to the manufacturer’s instructions. The yeast was grown on the middle, and it was diagnosed according to the differential colors that appear on the middle as a result of the interaction of the enzymes of the yeast with the medium and according to the different types of yeast⁽⁵⁾

Results and Discussion

Table No. (1) shows the fungi that were isolated from patients with burns, which were identified with approximately 9 fungal genera, which were represented by the following: *candida kruzei*, *candida tropicalis*, and *Rhizopus*, *candida albican*, *candida glabrata*, *Aspergillus spp*, *rhodotorella*, and the fungi are the opportunistic fungi group. Which

was characterized by the recurrence of the genus *Aspergillus*, which is considered the most frequent fungi among the other fungi that were isolated, while the rest of the genera were distinguished by different frequency and according to the type and area of burning from which the fungus was isolated. The study showed that the dominance of the genus *Aspergillus* among the rest of the fungal species, which ranged to 36.36%, is due to the ability of this fungus to grow in different environments, the ability to withstand harsh environmental conditions, and the ability to produce different enzymes that enable the use of nutrients in the fungus environment ^(6,7). . The candida fungus comes in second place in terms of its recurrence among the other fungal species, which ranged to 28.18%, especially candida albican, which was distinguished by its frequency among the rest of the other types of candida, not only in burn sores in patients, but also by its appearance in other areas of wounds that It was characterized by the emergence of the opportunistic characteristic of this yeast, and it seems that the reason is due to the weak immunity of the Ramadi or due to the availability of nutrients for the yeast and its transformation from symbiotic organisms to parasitic organisms on the areas of ulcers and wounds. ^(8,9) As for the rest of the other types of yeast and fungi, their appearance fluctuated between 12 - 3% from the rest of the other types, as shown in Table No. (1), and this is due to the nature of those yeasts and fungi, which have a lower ability to resist different environmental conditions ^(10,11).

Table No. (1) shows the fungi that were isolated from the burn areas of the patients

no	Name of fungus	Fungus frequency
1	Aspergillus	36.36%
2	Candidi albican	28.18%
3	Candida kruzie	12.2%
4	candida tropicalis	8.4%
5	candida glabrata	6.4%
6	rhodotorella	5.4%
7	Rhizopus	3.2%

Rhodoterella candida spp Aspergillus spp

Through this study, it can be said that burns can be considered one of the ideal environments in which micro-organisms and opportunistic fungi grow in, which are a large part of these micro-organisms. Consequently, the area of wounds and burns should be taken care of and cleaned well, and the growth of microorganisms, especially in patients with BP, must be prevented.

Conclusions

Aspergillus spp. Was dominant over the rest of the fungi, with a rate of 36 g 36% over the rest of the fungi species, while candida albican yeast appeared with a frequency rate of 28.18% compared to the rest of the other fungi, and the rate of appearance of other fungi was about 12-3% compared to the rest of the other fungi. The fungi were distinguished by the fact that they are all of the opportunistic type, which begins to infect the body when there is a weakening of immunity or infection with the associated burns and ulcers.

Conflict of Interest – Nil

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