

Short communication

Fungal Infection of the External Auditory Canal or Otomycosis in Western Libya

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Received: 01-06-2024

Accepted: 02-08-2024

Published: 13-08-2024

Keywords. Fungi, Otomycosis, Tripoli, Libya.

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ABSTRACT

Otomycosis has typically been described as fungal infection of the external auditory canal (EAC). The aim of the present work is to report on fungi incremented in this type of infection. The study was conducted at the department of biology, faculty of education, at university of Tripoli. The study was held from June to August 2023 at 30 pretreatment patients of the age group (15 -63) of both sex, males (13) and females (17), attending the outpatient department of Otorhinolaryngology at the two main Medical Centers in Tripoli-Libya, University Tripoli Hospital and Central Tripoli Hospital. External auditory canal exudates were collected, swabs in each patient were observed by direct microscopic examination and cultured in Sabouraud Dextrose Agar (SDA) medium. Using classical standard identification keys at the species level, *Aspergillus* with *Aspergillus niger* and *Candida* with *Candida albicans* species were reported as the most dominant isolates.

Cite this article. Enbaya A, El Masri T, Duzan A. Fungal Infection of the External Auditory Canal or Otomycosis in Western Libya. *Alq J Med App Sci.* 2024;7(3):767-769. <https://orcid.org/10.54361/ajmas.247343>

INTRODUCTION

Many species of fungi have been identified as the etiological agents of Otomycosis but *Aspergillus* and *Candida* species are the most commonly identified. They are usually existing as commensals which remain indolent on the surface and do not induce pathological change in External Auditory Canal (EAC) tissue unless provoked by favorable conditions to become pathogens. The hot, humid, dusty environment and absence of the protective cerumen by repeated washing, cleaning or swimming have been documented as predisposing factors [1]. The aim of the present work was to report fungal taxa involved in Otomycosis.

METHODS

Study design

An experimental study was conducted at the Department of Biology, Faculty of Education at University of Tripoli, Libya during the period from June to August 2023. About 30 pretreatment patients of the age group (15 -63) of both sex, males (13) and females (17), attending the outpatient department of Otorhinolaryngology at the two main Medical Centers in Tripoli-Libya, University Tripoli Hospital and Central Tripoli Hospital were included.

Sampling method

Samples from EAC were collected with the help of sterile Cotton swabs, stored in sterile sampling tubes and transported to the Laboratory for microscopic examination and culture. Sampling swabs from each patient was smeared onto glass slides, stained and examined under light microscope by using 40 × and 100 oil immersion objectives. For Fungal culture

the specimens were inoculated on (SDA) plates and incubated at room temperature 25°C for (2–4) weeks. Identification was made on the basis of colony morphology and Lactophenol cotton Bleu mount microscopy.

Statistical analysis

Data were presented as descriptive statistics using Microsoft excel spread sheath.

RESULTS

In the present work, a total of 30 pretreatment patients checked for the infection of external auditory canal with sex ratio (43.3%) 13 males and (56%) 17 females. The distribution of cases according M/F exhibited in table 1.

Table 1. Fungal species of male and female samples

Fungi	Female			Meal			The general ratio of Males and females
	Right Ear	Left Ear	The general ratio	Right Ear	Left Ear	The general ratio	
<i>Aspergillus niger</i>	43.3	52.3	47.1	35.71	37	36.23	40.8
<i>Aspergillus flavus</i>	10	9.5	9.8	21.43	3.7	14.5	12.5
<i>Aspergillus terreus</i>	3.33	4.8	3.9	7.14	7.4	7.25	5.8
<i>candida albicans</i>	36.67	14.3	27.5	11.91	51.9	27.54	27.5
<i>Candida sp</i>	0	4.8	1.9	19.05	0	11.59	7.5
<i>Penicillium sp</i>	0	14.3	5.9	4.76	0	2.89	4.2
<i>Emericela sp</i>	6.7	0	3.9	0	0	0	1.7
Total	100	100	100	100	100	100	100

DISCUSSION

In the present study, 7 fungal taxa that belong to the Class Hyphomycetes, 3 were identified from 30 pretreatment patients, attended the ENT department from the two main medical centers as mentioned above. The most common fungi isolated in the present study were the molds of the genus *Aspergillus* (*A.niger*, *A .flavus* ,*A.terreus*) and yeasts of the genus *Candida*, (*C .albicans*). In previous similar studies many species of fungi have been identified as the etiological agents of Otomycosis but species of *Aspergillus* and *Candida* were the most commonly identified [4, 2] and this is in consistent with our results.

Acknowledgments

We would like to thank Dr. Masouda Ghenghish on all his support, and the medical staff at the University Tripoli Hospital, especially Dr. Najwan Anbaya, and also medical staff at Central Tripoli Hospital to help them in the sample collection process.

Conflicts of Interest

The authors declare no conflicts of interest.

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العدوى الفطرية للقناة السمعية الخارجية أو التهاب الأذن الخارجية الفطري غرب ليبيا.

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المستخلص

يوصف فطريات الأذن عادة بأنه عدوى فطرية للقناة السمعية الخارجية، الهدف من هذا الدراسة هو الإبلاغ عن الفطريات المتزايدة في هذا النوع من العدوى. أجريت الدراسة بقسم الأحياء بكلية التربية- طرابلس ليبيا. خلال الفترة من يونيو إلى أغسطس 2023، على 30 مريضاً من الفئة العمرية (15 - 63) من كلا الجنسين، (13) ذكور و (17) إناث، من المرضى المراجعين للعيادة الخارجية لقسم أمراض الأنف والأذن والحنجرة (ENT) في المركزين الطبيين الرئيسيين في طرابلس - ليبيا، هما مستشفى جامعة طرابلس التعليمي و مستشفى طرابلس المركزي. تم جمع العينات وذلك بأخذ مسحات من إفرازات القناة السمعية الخارجية من كل مريض ثم زراعة في وسط (SDA)، ثم تم الفحص المجهرى المباشر للفطريات النامية، وباستخدام مفاتيح التعريف القياسية الكلاسيكية على مستوى الأنواع تم عزل عدة أنواع من الفطريات منها التابعة لجنس *Aspergillus* أبرزها *Aspergillus niger*، و عزل انواع من *Candida* أبرزها *Candida albicans* حيث كانت أكثر العزلات السائدة.

الكلمات المفتاحية. الفطريات، التهاب الأذن الفطري، طرابلس- ليبيا.