الافلاتوكسينات الناتجة من بعض أنواع الاسبرجلس المعزولة من مرضى نقص المناعة

رسالة مقدمة من الطالبة

منى أحمد رزق محمد

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لاستكمال متطلبات الحصول علي درجة الماجستير

في العلوم البيئية

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صفحة الموافقة على الرسالة

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AFLATOXINS PRODUCED FROM SOME ASPERGILLUS SPECIES ISOLATED FROM IMUMOCOMPRISED PATIENTS

Submitted By

Mona Ahmed Rezek Mohamed

B.Sc. of Science (Potany - Chemistry), Faculty of Science, Ain Shams University, 2002

A thesis submitted in Partial Fulfillment
Of
The Requirement for the Master Degree
In
Environmental Science

Department of Environmental Basic Sciences
Institute of Environmental Studies and Research
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APPROVAL SHEET

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Mona Ahmed Rezk Mohamed

ABSTRACT

This study aimed to detect aflatoxin production from *aspergillus* species from hospitalized immunocompromised patients. A total of 220 immunocompromised patients hospitalized in Ain Shams University Specialized Hospital and Wadi El Neel Hospital in Cairo, Egypt during 2012-2013 were including this study. The results obtained showed that 96 (43.6%) cases were positive fungal infection, while 124 (56.4%) were negative. A total of 55 positive cases were male patients (57.3%) while 41positive cases were female (42.7%). A total 55 positive cases were less than 50 years old (57.3%) while 41positive cases were more than 50 years old (42.7%).The highest number of etiologic agents were recovered from patients suffering from chronic obstructive pulmonary disease (COPD) where 22 fungal isolates were recovered represented by (22.9%) followed by pneumonia patients 20 fungal isolates were recovered (20.8%). The least number of fungal isolates were recovered from patients suffering from liver cell failure (LCF) where only 2 isolates were recovered (2.1%).

Yeast and yeast like group were the most frequently encountered etiologic agents where they were recovered from 76% of cases followed by *Aspergillus* group which represented 16.7% of the cases. *Fusarium* group came next by 4.2% and finally *Zygomycetes* group by 3.1%.

Three species of *Aspergillus* where recovered. *Aspergillus flavu*s was the most frequently recovered as isolated from 10 cases (10.4%) followed by *Aspergillus niger* isolated from 4 cases which represented (4.2%) while *Aspergillus fumigatus* isolated from 2 cases represented (2.1%).

Aflatoxins B1, B2 are produce from *A. flavus*, while *A. niger* and *A. fumigatus* are negative producer using thin layer chromatography (TLC) and high performance thin layer chromatography (HPTLC). Immunocompromised patients are of high risk for fungal infections. Permanent examination of immunocompromised patients to look for clinically evident fungal infections and elimination of pathogens in each predilections site should be carefully considered early as possible as we could using antifungal agents.

Contents

List of Abbreviations

A. flavus	*Aspergillus flavus*
A. fumigatus	*Aspergillus fumigatus,*
A. niger	*Aspergillus niger*
A.clavatus.....	*Aspergillus clavatus*
ABPA	Allergic bronchopulmonary aspergillosis
AF.....	Atrial fibrillation
AIDS.....	Acquired immunodeficiency syndrome
AMP	Amphotericin B
Asth. Bron	asthmatic bronchitis
BHI.....	Brain-Heart Infusion agar.
C. glabrata	*Candida glabrata*
C.albicans	*Candida albicans*
C.parapsilosis	*Candida parapsilosis*
C.tropicalis	*Candida tropicalis*
CMA	Corn Meal Agar
CNPA.....	Chronic necrotizing pulmonary aspergillosis
COPD.....	Chronic Obstructive Pulmonary Disease
CT	Computerized tomography
CVC	Central venous catheter
D. Foot	Diabetic foot.
DM	Diabetes mellites
FDA	Food and Drug Administration
FL	Fluconazole
FUO.....	Fever of unknown origin
G candidium.....	*Geotrichum candidium*
GIT.....	Gastrointestinal
HIV.....	Human immunodeficiency virus

List of Abbreviations

HPTLC	High performance thin layer chromatography
HSCT	Hematopoietic stem cell transplantation
IA.....	Invasive *Aspergillus*
ICU.....	Intensive care unit
IFIs	Infasive fungal infections
IPA	Invasive pulmonary aspergillosis
IZD	Inhibition zone diameters
KET	Ketoconazole
LCF	Liver cell failure
MEA	Malt extract
Myoc. Infra.....	Myocardial infraction
PDA.....	Potato dextrose agar
RF.....	Renal failure
SDA	Sabouraud's Dextrose agar
***Spp*.....**	*Species*
***T. inkin* .....**	*Trichosporon inkin*
TLC.....	Thin layer chromatography
TNF	Tumor necrosis factor
VOR	Voriconazole
5-FLU	5-Fluorocytosine

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