



بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

قال تعالى:

{ آمَنَ الرَّسُولُ بِمَا أُنزِلَ إِلَيْهِ مِنْ رَبِّهِ وَالْمُؤْمِنُونَ كُلٌّ آمَنَ بِاللَّهِ وَمَلَائِكَتِهِ وَكُتُبِهِ
وَرُسُلِهِ لَا نَفَرَقُ بَيْنَ أَحَدٍ مِنْ رُسُلِهِ وَقَالُوا سَمِعْنَا وَأَطَعْنَا غُفْرَانَكَ رَبَّنَا وَإِلَيْكَ
الْمَصِيرُ (285) لَا يُكَلِّفُ اللَّهُ نَفْسًا إِلَّا وُسْعَهَا لَهَا مَا كَسَبَتْ وَعَلَيْهَا مَا اكْتَسَبَتْ
رَبَّنَا لَا تُؤَاخِذْنَا إِنْ نَسِينَا أَوْ أَخْطَأْنَا رَبَّنَا وَلَا تَحْمِلْ عَلَيْنَا إصْرًا كَمَا حَمَلْتَهُ عَلَى
الَّذِينَ مِنْ قَبْلِنَا رَبَّنَا وَلَا تُحَمِّلْنَا مَا لَا طَاقَةَ لَنَا بِهِ وَاعْفُ عَنَّا وَاعْفِرْ لَنَا
وَارْحَمْنَا أَنْتَ مَوْلَانَا فَانصُرْنَا عَلَى الْقَوْمِ الْكَافِرِينَ (286) }

سوره البقره (285- 286)

Dedication

*I dedicate this work to... my parents who mean the world
to me*

*To the best gift given to me from Almighty Allah, my
father who has always been source of inspiration and
encouragement*

*To my sweet mother who has been always there to support me
and make my life shining*

And to everyone who smile on my face and help me.

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ABSTRACT

Fungal sinusitis is a serious problem that leads patients to seek medical care. The aim of this study was to test the antifungal activity of *Commiphora myrrha* (almurr alhigazy) on *Aspergillus species* among Sudanese patients. Seventy specimens were collected from patients with symptoms of fungal sinusitis, attended ENT hospital Khartoum, during the period from April to October 2015.

Different concentrations in methanol, petroleum ether, volatile oil and aqueous extracts of *Commiphora myrrha* were screened for their antifungal activity against clinical isolates of *Aspergillus species* (*Aspergillus flavus*, *A.fumigatus*, and *A.terreus*) and standard *Aspergillus niger* ATCC9763, using the agar diffusion and dilution methods.

The antifungal activity of two reference drugs: Itraconazole and Amphotericin B were determined against standard and clinical isolates and their activity was compared to the activity of *C.myrrha* extracts. From this study it was found that fungal sinusitis has high frequency in females of age 21-40 years group with one year as a history of disease. *Aspergillus flavus* was the major isolate. A significant association ($P=0.001$) was found between operation numbers and fungal sinusitis.

Methanol, petroleum ether and volatile oil extracts of the *C. myrrha* exhibited high activity against *Aspergillus flavus*, *A.fumigatus*, *A.terreus* and *A.niger*. While aqueous extract exhibited no activity against them.

Broth dilution revealed that the Minimum Inhibitory Concentration (MIC) was 6.25mg/ml for methanol and volatile oil extracts and 12.5 mg/ml for petroleum ether extract.

The Minimum Cidal Concentration (MIC) was 12.5 mg/ml for methanol and volatile oil extracts and 25 mg/ml for petroleum ether extract.

Amphotericin B was found effective against *Aspergillus flavus*, *A.fumigatus*, *A.terreus* and *A.niger*, while all isolates and *A.niger* except *A.terreus* were found resistant to Itraconazole.

The volatile oil, methanol and petroleum ether extract of *C. myrrha* exhibited high activity against tested *Aspergillus species*, and more effective than Itraconazole and Amphotericin B.

Gas chromatography analysis exhibited 10 compounds of *C. myrrha* and also compounds are identified qualitatively by the Retention time, and quantitatively by the area under the curve.

ملخص الاطروحة

تعتبر عدوي التهاب الجيوب الانفيه من المشاكل الخطره التي توجب المرضي للبحث عن العناية الصحيه.

هدف هذه الدراسة كان دراسه النشاط المضاد للفطريات للنبات الطبي المر الحجازي علي المعزوله طبيا من المرضي السودانيين الذين يعانون من مرض الجيوب الانفيه.

سبعين عينه جمعت من مرضي الجيوب الانفيه في مستشفى الانف والاذن والحنجره الخرطوم, في الفتره من ابريل الي اكتوبر للعام 2015 م .

هذه الدراسه تضم النشاط المضاد للرشاشيات لتراكيز مختلفه للمستخلصات الميثانول و ايثر البترول والزيت الطيار والمائي للنبات الطبي المر الحجازي اختبرت ضد الرشاشيات المعزوله طبيا وهي: رشاشيات فلافس, رشاشيات فيوميقيتس , و رشاشيات تيريس, و الرشاشيات القياسيه باستخدام طريقه الانتشار في الاجار وطريقه تخفيف الاجار.

حدد النشاط المضاد للرشاشيات لعقارين مرجعيين هما الايتراكونازول والامفوترسين ب ضد الرشاشيات القياسيه والمعزوله وقورن نشاطها مع نشاط مستخلصات المر الحجازي.

وجد في هذه الدراسه ان مرض الجيوب الانفيه يكون أكثر تكرارا في النساء في الفئه العمرية من 21 الي 40 سنه مع سنة واحدة كتاريخ للمرض, وان رشاشيات فلافس كانت اكثر تكرارا . وقد وجد انه توجد علاقه بين عدد العمليات ومرض الجيوب الانفيه.

مستخلصات الميثانول و ايثر البترول والزيت الطيار للنبات الطبي المر الحجازي اظهرت فعاليه ضد : رشاشيات فلافس, رشاشيات فيوميقيتس , و رشاشيات تيريس, و الرشاشيات القياسيه بينما المستخلص المائي لم يظهر فعاليه.

طريقه تخفيف الاجار اظهرت ان التركيز المثبط الادني كان 6.25 ملجم /مل للمستخلصات الميثانول والزيت الطيار و 25 ملجم/مل لمستخلص ايثر البترول.

التركيز القاتل الادني كان 12.5 ملجم/مل مل للمستخلصات الميثانول والزيت الطيار و 25 ملجم/مل لمستخلص ايثر البترول.

وجد ان الامفوتيرسين ب له تأثير فعال علي رشاشيات فلافس, رشاشيات فيوميقيتس , و رشاشيات تيريس, و الرشاشيات القياسيه. بينما كل الرشاشيات المعزوله والقياسيه ما عدا رشاشيات تيريس وجدت انها مقاومه للايتراكونازول.

مستخلصات الميثانول و ايثر البترول والزيت الطيار للنبات الطبي المر الحجازي اظهرت فعاليه
ضد انواع الرشاشيات المختبره , وانها اكثر فعاليه من الايتراكونازول والامفوتيرسين ب.
أظهر التحليل اللوني للغاز عن 10 مركبات للمر الحجازي (كومفيراميرا) وحددت هذه المركبات
نوعيا باستخدام الوقت المحتفظ وكميا عبر المنطقه تحت المنحني.

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