الآية

بسم الله الرحمن الرحيم

قال تعالى:

(سَدُ رَبِيهُ مَا تَهُ مَا فِي الآفَ اقِ وَفِي أَنْفُسِهُم جَتَّى تَدَّ بَيَّنَ

هُمْ أَنَّه الْحُرَقُ أُولِمُ كُفِ بِرِبِّكَ أَنَّه أُعلَى كُلِّ شَيء

شهيد)

صدق الله العظيم سورة فصلت الاية 53

Dedication

I dedicate this research to person whose prayer helps me my lovely mother (Fathia Mohamed dongala)

To person whose encourage me to the way of success my father

My brother and sisters for their support

My friends and my colleagues the people whom I love

and respect

Everyone from him I learned And every one who put his trust on me

Acknowledgment

First of all I would like to thank Allah for providing us the strength and ambition to fulfill this study.

And would like to thank our supervisor Dr. Yousif FadlAllah for his supervision and advices for project completion.

Our thanks are also extended to all staff members of the microbiology department for their helped where this work was done.

Our thanks are also extended to all the staff of Alestad cafeteria for their helped that accepted my work and gave me all Information was needed.

Lastly we would like to thank all volunteers who sustain the pain.

And all persons who care about health and wellbeing.

Abstract

Food handlers play a major role in the transmission of food borne diseases which represents a global health burden. Carriage of *Staphylococcus aureus*, in general, and enterotoxigenic strains, in particular, is an important risk factor for the contamination of food. This study was undertaken to determine the prevalence and risk factors of *Staphylococcus aureus* in nasal and hands of food handlers among food handlers working in 3 different food processing resturans .. Nasal and hand (right and left) swabs were collected from each food handlers. The swabs were inoculated on mannitol salt agar plates and incubated aerobically overnight. Identification of *S. aureus* isolates was done by Gram stain and biochemical tests.

Out of 60 swabs investigated, 25(41.7%) were *S. aureus*. Of them11(18.3%) were nasal isolates, while the rest 14(23.3 %) were isolated from hands.

When *S. aureus* was tested against some antibiotics, it was sensitive to erythromycin(100%), gentamicin (100%), and vancomycin (100%). But resistant to methicillin (80%).

The obtained results should be of public health concern and highlights the need for primary health care and hygiene among food handlers.

ملخص الدراسه

مناولي الطعام لهم دور رئيسي في انتقال الامراض المنقوله عن طريق الاغذيه والتي تمثل عبئ صحي ,نقل البكتريات العنقوديه وعلي وجه الخصوص المنتجه للسم المعوي عامل خطر ومهم لتلوث التغذيه ,الهدف من هذه الدراسه هو تحديد مدي انتشار والعوامل الخطره البكتريا العنقوديه الذهبيه في انف وايدي العاملين علي الطعام واللذين يعملون في ثلاثه مطاعم مختلفه, تم جمع مسحات الانف والبدين (اليمني واليسري) من كل عامل علي الطعام ,هذه المسحات زرعت علي اجار المانتول الملحي وحضنت هوائيا لاكثر من ليله وقد تم تحديد المستعمرات الذهبيه بواسطه صبغه غرام والاختبارات البيوكيميائيه ,من اصل 60 مسحه اختبرت25(41.7%) كانت البكتريا العنقوديه الذهبيه ,منهم 11(18.38%) عزلت من الايدي, تم اختبار بكتريا المكورات العنقوديه ضد بعض المضادات الحيويه المعزوله, وكانت حساسه للاريثرومايسين (100%) والجنتاميسين (100%) والكن مقاومه للميثيسيلين (80%).

ينبغي ان تكون النتائج التي تم الحصول عليها من الصحه العامه وتسليط الضوء على الحاجه للرعايه الصحيه والصحه العامه بين مناولي الطعام.

Tables of Contents

Title	Page No
الآية	I
Dedication	II
Acknowledgments	III
Abstract(English)	IV
Abstract(Arabic)	V
Contents	VI
List of tables	VII
List of graphs	VIII

Chapter one: Introduction			
1.1Introduction	1		
1.2. Rationale	2		
1.3Objectives	3		
1.3.1General objectives	3		
1.3.2Specific objectives	3		
Chapter two: literature Review			
2.1 Food borne diseases	4		
2.2 Staphylococcal Food Poisoning	4		
2.3 Mode of transmission	4		
2.4 Food handlers the main source of food contamination	6		
2.5 Staphylococcus aureus	6		
2.6 Staphylococcal enterotoxins	7		
2.7 Diagnosis	9		
2.8 Treatment	9		
2.9 Prevention	10		

Chapter three		
Materials and methods		
3.1 Study design		
3.1.1 Type of study	11	
3.1.2 Study area	11	
3.1.3 Study population	11	
3.1.4 Inclusion criteria	11	
3.1.5 Exclusion criteria	11	
3.1.6 Sample size	11	
3.1.7 Ethical consideration	11	
3.2 collections of specimens	11	
3.3 Culture	12	
3.4 Identification	12	
3.4.1 Gram stain	12	
3.4.2 Biochemical tests	12	
3.4.2.1 Catalase test	12	
3.4.2.2 DNase test	12	
3.4.2.3 Coagulase test	12	
3.4.3.1 Disc diffusion technique	12	
3.4.3.2 Method of susceptibility	13	
3.4.3.3 Antimicrobial disc	13	
Chapter Four		
Result	14	
Chapter Five		
Discussion and conclusion	18	
Reommendations	19	
References	20	
Appendices	23	

List of Tables

Table(1)	Shows frequency of each sample enrolled	14
	in this study	
Table(2)	Shows the distribution of each age group	14
	among the study population	
Table (3)	Antimicrobial sensitivity of	14
	Staphylococcus aureus isolated from left	
	hand	
Table(4)	Antimicrobial sensitivity of S.aureus	14
	isolated from Right hand	
Table(5)	Antimicrobial sensitivity of S.aureus	15
	isolated from Nasal carriers	

List of FIGURES

FIGURE	Title	Page
NO		no
FIGURE(1)	percentage of nasal carrier of S.aureus	15
	among food handler	
FIGURE(2)	the percentage of Right hand carrier of	16
	S.aureus among food handlers	
FIGURE(3)	Shows the percentage of Left hand carrier	16
	of S.aureus among food handlers	