

قال تعالى :



وَكَنْ تَرْضَى ۚ عَنْكَ الْيَهُودُ وَكَا الَّنْصَامَ يَ حَتَّى ۚ تَتَبَعَ مِلَّتُهُ مُ ۚ قُلُ إِنَّ هُدَى اللَّهِ هُوَ الْهُدَى ۚ ۗ وَكَنْنِ

التَّبُعْتَ أَهْوَاءَهُ مُ بَعْدَ الَّذِي جَاءَكُ مِنَ الْعِلْمِ فَمَا لَكَ مِنَ اللَّهِ مِنْ وَلِي وَلَا يَصِيرٍ

صدق الله العظيم سورة البهرة (120)

Acknowledgement

Thanks and praise to Allah, who give me health, strength and patience to complete this study.

I would like to express my deep gratitude to my supervisor Dr. Eltayeb Hassan Ahmed for his patience; smooth guidance, serious follow up and constructive criticism through the term of this ...God bless him.

Appreciation is also extended to the staff of the college of Medical Laboratories Science, with special reference to the department of Microbiology for their sincere effort to quality and builds high caliber graduates to satisfy the national requisite for this vital specialty.

Dedication

To the candle which burns to enlighting life ... My Mother

To the whom I live for making his dream become true ... My Father

To special person who inspired and give me the meaning of being My

To those who made it possible

My Teachers

To whom encouraged me

My brothers and friends

Abstract

The present study was carried out to evaluate the microbiological laboratories performance in private sectors in term of processing urine and swab samples for isolation, identification the bacteria and availability of requirements for susceptibility test. The study had done through two phases, before intervention phases where the current situation of these laboratories was reported, intervention course where the study group was instructed to select of media, proper system of identification and necessary items for susceptibility test. The intervention did not involve control group, the study group involved seven laboratories and control group involved four laboratories. The result of pre-intervention phase showed that both groups applied proper type of media in case of urine samples while in swab samples only 1(14%) and 1(25%) of study group and control group applied right media, entirely study population did not applied identification scheme. The study group and control group in preintervention phase did not had internal quality control for susceptibility test and applied rough method to measure the zone of inhibition, 2(29%) of study group and 1(25%) of control group did not had maccfarland reagent. The result after intervention phase of study group revealed (100%) response to primary protocol of urine and swab samples isolation and identification bacteria scheme while no change had occurred in control group. In susceptibility test the study group showed (88%) comply to test requirements where as no improvement had occurred in control group.

ملخص الاطروحة

الدراسه الحاليه نفذت لتقييم اداء مختبرات الاحياء الدقيقه في القطاعات الخاصه في التعبير عن معالجه عينات البول والمسحه والتعرف على البكتيريا وعزلها وتوفير المتطلبات لاختبار الحساسيه لها وتم عمل هزه الدراسه خلال مرحلتين وهما مرحله قبل التدخل حيث تم فيها تسجيل هزه المحتبرات بحالتها الحاليه اما مرحله التدخل تتم في المجموعه الدراسيه والتي تضم سبع مختبرات والتي تم فيها احتيار الوسط الزراعي المثالي للتعرف والمتطلبات الضروريه لعمل اختبار الحساسيه اماالمجموعه القياسيه والتي تضم اربع مختبرات لاتتم فيها مرحله التدخل.

اوضحت النتائج قبل مرحله التدخل ان كلتا المجموعتين عملت على اختيار الوسط الزراعي المثالي في حاله عينات البول ببينما (14%) من المجموعه الدراسيه و (25%) من المجموعه القياسيه عمات على اختيار الوسط الزراعي المثالي في حاله عينات المسحه واوضحت النتائج قبل التدخل ايضا ان كلتا المجموعتين الدراسيه والقياسيه لم يكن لديها ضبط جوده داخلي لاختبار الحساسيه واستعملت طرق تقريبيه لقياس منطقه التثبيط , (25%) من المجموعه الدراسيه و (25%) من المجموعه القياسيه لديها محلول ماكفارلاند القياسي .

وبعد التدخل اوضحت النتائج ان المجموعه الدراسيه استجابت للبرتوكول الاولى للتعرف وعزل البكتيريا من عينات البول والمسحه بينما لاتغير حدث ف المجموعه القياسيه.

اما في اختبار الحساسيه اظهرت المجموعه الدراسيه تحسنا بلغ (88%) بينما لاتحسن يزكر في المجموعه القياسيه.

TABLE OF CONTENTS

No	Subject	Pages
1.	الايه	I
2.	Dedication	II
3.	Acknowledgement	III
4.	Abstract	IV
5.	الخلاصه	V
6.	Table of contents	VI
	CHAPTER ONE	
1	Introduction	2
1-2	Objectives	2
1-2-1	General objective	3
1-2-2	Specific objectives	3
1-3	Rationale	3
	CHAPTER TWO	
2	Literature review	5
2-1	Preparation of SOPS	5
2-2	Pre analytic stage	5
2-3	Checking of specimens	6
2-4	Analytical stage	6
2-5	Control of stains and reagents	6
2-6	Control of equipment	7
2-7	Post analytic stage	7
2-8	Quality control of culture media	7
2-9	Quality control of personnel	8
2-10	EQA	9
2-11	Ojective of EQAS	9
2-11-1	Benefits of EQAS	9
2-11-2	Process of EQAS	9
2-12	Basic of success of EQAS	10
2-13	Requairements of EQAS	10
2-13-1	Material of supplied	10
2-13-2	Manner of performancing tests	10
2-13-3	Number of particepating laboratories	11
2-14	Antibiotic of susceptibility test	11
2-15	Indication for Antibiotic of susceptibility test	11
2-16	General principle of antibiotic of susceptibility	11
2-16-1	The dilution method	11
2-16-2	The diffusion method	12

2-16-3	Modified Kirby Bauer	12		
2-17	Antibiotic discs	13		
2-18	Turbidity of STD	13		
2-19	Swabs	14		
2-20	Procedure	14		
2-21	Clinical definition of terms	15		
2-21-1	Susceptibility	16		
2-21-2	Intermediate	16		
2-21-3	Resistance	16		
2-22	Factors influencing zone in antibiotic of susceptibility test	16		
2-23	Result probable cause by disc diffusion test	17		
2-24	Quality control in susceptibility test	18		
2-25	Frequency of quality control in susceptibility test	18		
CHAPTER THREE				
3-1	Study design	21		
3-2	Study area and study period	21		
3-3	Study population	21		
3-4	Study size	21		
3-5	Data collection tools	21		
3-6	Data analysis	21		
3-7	Ethical considerations	21		
3-8	Methdology	22		
3-8-1	Pre intervention phase	22		
3-8-2	Intervention phase	22		
3-8-3	Post intervention phase	22		
3-9	Standard method of isolation and identification of urine and swab samples	23		
3-9-1	Inoculation	23		

3-9-2	Incubation	23
3-9-3	Identification	23
3-9-4	Gram stain	23
3-9-5	Biochemical tests for gram positive bacteria	23
3-9-5-1	Mannitol salt agar	23
3-9-5-2	DNAse medium	23
3-9-5-3	Catalase test	24
3-9-6	Biochemical tests for gram negative bacteria	24
3-9-6-1	Indole test	24
3-9-6-2	Urease test	24
3-9-6-3	Citrate test	24
3-9-6-4	KiA	25
3-9-6-5	Oxidase test	25
3-10	Requirements of susceptibility test using modified Kirby Bauer	25
3-10-1	Preparation of suspension based on McFarland matching	25
3-10-2	Seeding based on Muller Hinton or sensitivity media	25
3-10-3	Discs application	25
3-10-4	Reading of result	26
	CHAPTER FOUR	
4	Results	28
	CHAPTER FIVE	45
5	Discussion	45
6	Recommendations and conclusion	48
7	References	49
9	Appendices	52
	Тррениесь	52

List of Table

Subject	Pages	
Table No (1):Showed the results of the study group for isolation	30	
and identification of Gram negative bacteria from urine sample		
before intervention phase.		
Table No (1.2):Showed the results of the study group for isolation	30	
and identification of Gram positive bacteria from urine sample		
before intervention phase.		
Table No (2.1) Showed the results of the study group for isolation	31	
and identification of Gram negative bacteria from Wound swab		
before intervention phase.		
Table No (2.2) Showed the results of the study group for isolation	32	
and identification of Gram positive bacteria from Wound swab		
before intervention phase.		
Table No (3.1) Showed the results of the control group for	33	
isolation and identification of Gram negative bacteria from urine		
sample before intervention phase.		
Table No (3.2) Showed the results of the control group for	33	
isolation and identification of Gram positive bacteria from urine		
sample before intervention phase.		
Table No (4.1) Showed the results of the control group for	34	
isolation and identification of Gram negative bacteria from		
Wound swab before intervention phase.		
Table No (4.2) Showed the results of the control group for	34	
isolation and identification of Gram positive bacteria from		
Wound swab before intervention phase.		
Table No (5.1) Showed the results of the study group for isolation	35	
and identification of Gram negative bacteria from urine sample		
after intervention phase.		
Table No (5.2) Showed the results of the study group for isolation	35	
and identification of Gram positive bacteria from urine sample		
after intervention phase.		
Table No (6.1) Showed the results of the study group for isolation	36	
and identification of Gram negative bacteria from Wound swab		
after intervention phase.		
Table No (6.2) Showed the results of the study group for isolation	37	
and identification of Gram negative from Wound swab after		
intervention.		
Table No (7.1) Showed the results of the control group for	38	
isolation and identification of Gram negative bacteria from urine		
sample after intervention phase.		

Table No (7.2) Showed the results of the control group for isolation and identification of Gram positive bacteria from urine		
sample after intervention phase.		
Table No (8.1) Showed the results of the control group for	39	
isolation and identification of Gram negative bacteria from		
Wound swab after intervention phase.		
Table No (8.2) Showed the results of the control group for	39	
isolation and identification of Gram positive bacteria from Wound		
swab after intervention phase.		
Table (9) showed performance requirements of Susceptibility test		
of Isolates from study group before Intervention phase.		
Table (10) showed performance requirements of Susceptibility	41	
test of Isolates from control group before Intervention phase.		
Table (11) showed performance requirements of Susceptibility	42	
test of Isolates from study group after Intervention phase.		
Table (12) showed performance requirements of Susceptibility		
test of Isolates from control group after Intervention phase.		