

Incidence and antibiotic resistance pattern of *E.coli* in different clinical specimens



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By

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Department of Chemistry

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Surah Taha
verses
25-28

رَبِّ اشْرَحْ لِي صَدْرِي ﴿٢٥﴾ وَيَسِّرْ لِي أَمْرِي ﴿٢٦﴾
 وَأَحْلِلْ عُقْدَةً مِنْ لِسَانِي ﴿٢٧﴾ يَفْقَهُوا قَوْلِي ﴿٢٨﴾

(25) Rabbi ishrah lee sadree (26) Wayassir lee amree
 (27) Waohlul AAuqdatan min lisanee (28) Yafqahoo qawlee

*"O my Lord! open my chest for me and make my task easy for me &
 untie the knot from my tongue so that they understand my speech"*

DECLARATION

I **SIDRA MARIUM D/O MUHAMMAD SIDDIQUE HASRAT** ID: **14003140045** Session **2014-2016** hereby declare that the matter printed in the thesis titled **“INCIDENCE AND ANTIBIOTIC RESISTANCE PATTERN OF *E.COLI* IN DIFFERENT CLINICAL SPECIMENS”** is my own work and has not been printed, published and submitted as research work, thesis or publication in any form in any University, Research institution etc. in Pakistan or Abroad.

Dated: _____

(SIDRA MARIUM)

RESEARCH COMPLETION CERTIFICATE

Certified that the research work contained in this thesis titled, **“INCIDENCE AND ANTIBIOTIC RESISTANCE PATTERN OF *E.COLI* IN DIFFERENT CLINICAL SPECIMEN”** has been carried out and completed by **SIDRA MARIUM, ID: 1400314004**. The quantum and the quality of the work contained in this thesis is adequate for the award of Degree of MS.

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Dedication

This effort is dedicated to my beloved parents and family and my teachers and to every person in the world who help others without any reward with the spirit of Abdul Sttar Edhi.

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ABSTRACT

Antibiotic drug resistance is a major public problem which leads to the ban on many antibiotics. The objective of the present study was to determine the incidence and antibiotic resistance pattern of *E.coli* in different clinical specimens. 800 samples of urine, tracheal secretion, wound and blood were collected. The microbe identification was carried out by using standard method. The antibiotic resistance pattern of *E.coli* were determined through Disk diffusion method. The result showed the maximum incidence of *E.coli* was observed in urinary tract infection. The maximum antibiotic resistance was observed for cefixime 90% followed by co-trimaxazole 89.6%, ciprofloxacin 85.7%, ceftriaxone 84.2%, ceftaidime 80.3%, amoxicillin+clav 73.2%, tobramycin 44%, piperacillin+tazob 20%, imipenam 12.6% and amikacin 122.2%. Maximum sensitivity was showed by amikacin 87.7% and imipenam 87.3%, cefoprazone+sul 84.6%, piperacillin+tazob 80%, tobramycin 55.2%. This study showed that single antibiotic showed different resistance pattern according to different sites of infection. This proved that single antibiotic cannot be used for different infection sites. The incidence pattern of *E.coli* was changing according to time period. *E.coli* changing resistance pattern is need to be addressed.

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LIST OF ABBREVIATIONS

Abbreviations	Full Text
CD4 T-cell	Receptor for HIV
CD8T	T cell with CD receptor
EHEC	Enterohaemorrhagic <i>Escherichia coli</i>
ETEC	Enterotoxigenic <i>Escherichia coli</i>
EAEC	Enterotoxigenic <i>Escherichia coli</i>
EIEC	Enteroinvasive <i>Escherichia coli</i>
HIV	Human Immunodeficiency virus
MDR	Multi-drug resistance
PCR	Polymerase chain reaction
PD- 1	Precursor D1 Protein
URI	Upper respiratory infection
UTI	Urinary tract infection
UT	Urinary tract
URTI	Upper respiratory tract infection
WI	Wound infection



References

Chapter 01

INTRODUCTION

1.1-Infection:

The entry of the microorganism into the body of the host after occupation of the host immune system, causing invasion of the host tissues (Signore A *et al.*, 2011). The host response to the infection in different ways like sub-clinical or clinical which are characterized by onset, by count of white cells or inflammation. The different agent are responsible for infection which may be bacteria, viruses, parasites, nematodes, arthropods and helminths (Alberto Signore, 2013).