Cairo University
Faculty of Veterinary Medicine
Department of Microbiology

Antibiotic resistance patterns of *Campylobacter* species isolated from different sources

Thesis presented by

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B.V.Sc., Cairo University (2009)

For

The Degree of Master in Vet. Med. Sciences
(Bacteriology, Immunology and Mycology)

Under supervision of

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(2015)

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Abstract:

Bacteriological examination of 100 chicken meat samples (50 breasts and 50 thighs), 30 human stool samples from apparently healthy persons and 50 chicken intestine samples were investigated. 21 samples (chicken meat samples) were found to be bacteriologically positive for campylobacters with the incidence of 11.7%. The incidence of *C. jejuni* and *C. coli* among positive samples was 8% and 13%, respectively, among the chicken meat samples. The results of this study are dependent on three optimized factors for selective enrichment of *Campylobacter* including; the pre-enrichment broth, blood based solid media and antibiotic supplements. All *C. coli* isolates were resistant to metronidazole (100%), and showed resistance to ciprofloxacin and nalidixic acid (69.2% each) followed by norfloxacin, enrofloxacin and ceftriaxone (61.5% each) then amoxicillin/clavulanic acid and erythromycin (46.1% each) and tetracycline (38.4%). Also, all *C. jejuni* isolates were resistant to metronidazole (100%) followed by ciprofloxacin and nalidixic acid (62.5% each) and tetracycline (50%). On the other hand 84.6% of *C. coli* strains were sensitive to nitrofurantoin followed by chloramphenicol (69.2%). Also, 87.5% of the *C. jejuni* strains were sensitive to nitrofurantoin followed by chloramphenicol and amoxicillin/clavulanic acid (62.5% each). All the examined strains revealed negative reaction for three tested QRDRs; *gyrB, parE* and *parC*. All quninlone resistant isolates in terms of their antibiotic biotypes showed PCR results. Molecular detection of *gyrA* is considered a simple, rapid and effective way to discriminate *gyrA* gene mutant resistant isolates of *Campylobacter* species without the need for sequencing.

Key words:

Campylobacter, isolation, PCR, antimicrobial sensitivity, antibiotic resistant genes

﴿ قَالُواْ سُبۡحَٰنَكَ لَا عِلۡمَ لَنَآ إِلَّا مَا

عَلَّمۡتَنَآۖ إِنَّكَ أَنتَ ٱلۡعَلِيمُ ٱلۡحَكِيمُ ٣٢ ﴾

سورة البقرة٣٢

Dedication

I dedicate my work to my family, a special feeling of gratitude to my loving parents whose words of encouragement and push for tenacity ring in my ears. My husband Tamer has never left my side and is very special, my brother Mohammed who has supported me throughout the process.

I also dedicate this work to my brothers Khaled and Mostafa, my sisters Asmaa, Aya, Rehab and Doaa, my beloved son Seif and my beloved children Rokaya, Rodaina, Retal, Mahmoud, Khadija, Eyad, Mostafa, Ali, Pillar and Farida.

Acknowledgement

*First of all, thanks to **ALLAH** to whom I relate my success in achieving any work in my life.*

*The word can never express my infinite gratitude to **Prof. Dr. Jakeen Kamal Abd El-Halem El-Jakee**, Professor of Microbiology and Immunology, Microbiology Department, Faculty of Veterinary Medicine, Cairo University for suggesting the problem of this thesis, her supervision, fruitful guidance, continuous encouragement, valuable criticism, and help during the course of this thesis.*

*Special thanks as well as great appreciation to **Assistant Prof. Dr. Mahmoud Dardiri Mohamed El-Hariri**, Assistant Professor of Microbiology and Immunology, Microbiology Department, Faculty of Veterinary Medicine, Cairo University for his supervision and for giving me much of his time and help during the practical work of this thesis.*

*I wish to express my deep thanks to **Prof. Dr. Aziza Mahrous Mohammed Amer**, Professor of Pharmacology and Dean of the faculty, Faculty of Veterinary Medicine, Cairo University, for her supervision and precious help during this thesis.*

*Special thanks to **Assistant Prof. Dr. Ahmed Samir**, Assistant Professor of Microbiology and Immunology, Faculty of Veterinary Medicine, Cairo University and **Dr Rehab El-Helw**, Lecturer of Microbiology and Immunology, Faculty of Veterinary Medicine, Cairo University, for their precious help during this thesis.*

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