

**Republic of Iraq**  
**Ministry of Higher Education**  
**& Scientific Research**  
**AL-Muthanna University**  
**College of Science**  
**Department of Biology**



# **Prevalence of *Clostridium perfringens* in lobbies and surgical theater of hospitals in Al-Muthanna province**

A Thesis Submitted to the Council of college of Science /Al Muthanna University as  
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## Abstract

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*Clostridium perfringens* is a gram-positive, anaerobic, spore forming and rod-shaped bacterium, and it is responsible for a wide variety of diseases in both humans and animals including gas gangrene, septicemia, bacteremia and food poisoning, *C.perfringens* is able to form highly resistance spores that can survive in the environments for years.

The study included the collection of (1038) from different sources were taken from different environmental locations of hospitals, which included (lobbies, operating theaters, equipment inside operating, patient beds inside hospital lobbies, walls and floors inside hospital lobbies). These samples were collected from Al-Hussein Teaching Hospital (638), Women's and Children's Hospital (112), Al-Rumaitha General Hospital (188) and Al-Khader General Hospital (100) during the October (2021) to April (2022) to isolation and diagnosis of *Clostridium perfringens* and determining the percentages contamination in Al-Muthanna province hospitals environment

The isolates were diagnosed on different agricultural media based on microscopical shape and biochemical tests. The results showed (135) from 403 samples gave positive results in the lobbies of Al-Hussein Teaching hospital, (51) from 235 samples gave positive results in operating theaters of Al-Hussein Teaching hospital, (24) from 49 samples gave positive results in the lobbies of Women's and Children's Hospital, and (27) from 63 samples gave positive results in operating theaters of Women's and Children's Hospital, (45) from 144 samples gave positive results in the lobbies of Al- Rumaitha General Hospital, (16) from 44 samples gave positive results in operating theaters of Al-Rammathia General Hospital, (18) from 70 samples gave positive results in lobbies of Al-Khader General Hospital, (9) from 30 samples gave positive results in operating theaters of Al-Khader General Hospital.

## *Abstract*

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The sensitivity of isolates to (13) types of antibiotics was detected, which included: (Penicillin, Ampicilin, Amoxicillin-Clavulanic acid, Erythromycin, Tetracycline, Vancomycin, Streptomycin, Neomycin, Rifampin, Amikacin, Imipenem, Metronidazole, Colistin).

All *C. Perfringens* isolates showed a high sensitivity to the antibiotic Imipenem (100)%, and less sensitivity to the antibiotics Erythromycin (86.66%), Vancomycin (93.33%), Amikacin (90%), Streptomycin (96.66%), Tetracycline (66.66%), Neomycin (30%), Rifamycin (26.66%), and Ampicillin (13.33%), while all *C. Perfringens* isolates showed high resistance to word the antibiotic Colistin and metronidazole (100%) for each of them, and the lowest resistance to word penicillin (53.33%) and Amoxicillin – Clavulanic acid (40%)