

MICROBIAL PATHOGENESIS, INFECTIOUS DISEASE, ANTIMICROBIALS AND DRUG RESISTANCE

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An assessment of antibiotic-resistant among *Mycobacterium tuberculosis* isolated from displaced and nondisplaced Iraqi patients

Background: The first and major step in the diagnosis of TB is its accurate and early detection. To fulfill this objective a number of methods have been developed and reported that obtain early growth of *M. tuberculosis*. For exactly detection of the TB cases recently a novel polymerase chain reaction (PCR) based diagnostic kit has been developed. It is based on the nucleic acid amplification (NAA) of specific region of *Mycobacterium* DNA. QuantiFERON-TB test, (QFT) an in vitro diagnostic test that measures a constituents of cell-mediated immune reactivity to *M. tuberculosis* was approved by food and Drug administration (FDA) as an aid for identifying *Mycobacterium tuberculosis* infection.

Methodology: In the current study there were 50 patients (18 displaced and 32 nondisplaced TB patients) and 40 healthy control. The patient were examined for the presence of TB utilizing QuantiFERON-TB Gold In-Tube assay, polymerase chain reaction(PCR), AFB smear and TB culture. Drug susceptibility of isolates to first-line anti-tuberculosis drugs was performed using the proportion method on Lowenstein Jensen medium (LJ medium) within 2-4 weeks.

Results: It was found that the frequency of positivity of acid-


fast stain, culture and QuantiFERON for displaced and non-displaced patients patients was 36 , 33.3 and 100 and 64 , 66.7 and 100 % respectively. The positivity towards polymerase chain reaction for primers IS6110 and MPB64 for displaced patients was 37.5 and 100% respectively whereas for nondisplaced patients was 14.3 and 100 % respectively too. The present study revealed that 20 isolates out of 34 tested were resistant to one or more of antituberculosis drugs tested which were isoniazid, streptomycin, rifampicin and ethambutol. Statistically, there was a significant difference between types of drug and frequency of resistance among displaced and nondisplaced Iraqi patients ($P < 0.05$)

Conclusions: The present study showed that all the mycobacterial isolates tested for antimycobacterial drugs were resistant to at least one antibiotic used and most of them were multiple-resistant. Statistically, there was a significant difference between types of drug and frequencies of resistance ($P < 0.05$).

Speaker Biography

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