Isolation of *Clostridium difficile* from Stool Sample and Detection of a and B Toxin Encoding Gene by PCR

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Background & Objectives: *Clostridium difficile* is gram positive and anaerobe bacteria that it is known as prevalent factor of hospital diarrhea. The role of this bacteria with long use antibiotics have been proved in creation of colitis .the important virulence factor of this bacteria is A and B toxins. The purpose of this study is isolation of clostridium difficile from stool sample and detection of A and B toxins encoding gene in order to access to routine methods of clinical diagnostic.

Methods: Recognition of A and B toxins encoding gene by uniplex and multiplex PCR have been done by two pair primers. Synchronous recognition A and B toxins gene with sequence cdd3 that is insertion sequence of genome of clostridium difficile have been done in order to isolate bacterial strains from other kind of anaerobe bacteria. After culturing and isolation of *Clostridium difficile* of 136 stool samples, identification of genes encoding toxins A and B were performed.

Results: From 136 stool sample have studied, 3 *Clostridium difficile* strains isolated, that all strains having A and B toxin gene.

Conclusion: Between diverse methods of detection of *Clostridium difficile* polymerase chain reaction, besides sensitive and high characterize, need few time. Because only toxigenic strains are able to virulent. So, use of this way is sufficient methods for diagnostic *Clostridium difficile*. So, regard to resulting of this research, Methods of isolation and molecular diagnostic can be used routine in clinical laboratory.

Keywords: *Clostridium difficile*; A and B Toxins; Pseudomembrane Colitis