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IN-VIVO PATHOGENICITY OF AEROLYSIN TOXIN OF *AEROMONAS HYDROPHILA* ISOLATED FROM DIARRHEA PATIENTS IN THI-QAR PROVINCE

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ABSTRACT : ***Aeromonas*** **species are highly distributed in the world and causative agent for fish, animal and human diseases. The study concluded 255 fecal sampler (168 sample were collected from patient suffering from diarrhea and 82 sample from apparently healthy). The *Aeromonas hydrophila* isolates were identified depended on culture media and biochemical methods for I field *A.hydrophila*; the PCR technique used to detection thewhole forming Toxin (aerolysin) gene. The results revealed that 23 isolates of *A. hydrophila* were identified from diarrheal patients, while 18 isolates from apparently healthy. Aerolysin gene was detected in 9 isolates only. To determine the *in vivo* pathogenicity of *A. hydrophila*, forty two mice were used to detect LD_{50} value, then determined the histological changes of organs including intestine and liver were obtained for re-isolation and histopathological examination.**

Lethal dose of also demonstrated in mice was 0.9×1000000000. The microscopic examination of histopathological sections of intestine of infected mice after LD_{50} experiment showed that preserver of hyperplasia of lymphoid tissue with thickening in villi, congestion of central vein of liver, mild inflammation in periportal area, fatty changes and parenchymal cell of liver.

Key words : *Aeromonas hydrophila*, aerolysin toxin, lymphoid tissue, PCR technique.

INTRODUCTION

Aromonas species was an aquatic bacteria that founded in many natural environments and involved in a variety of human diseases (Janda and Abbott, 2010). Although, *Aeromonas* species were opportunistic pathogens for humans, some studies had shown that they may also act as primary pathogens for humans in a number of infections including; septicemia, wound infection, meningitis, pneumonia, hemolytic uremic syndrome, necrotizing fasciitis and gastro-enteritis (Cheng *et al*, 2004). The *Aeromonas* spp. recognized as human pathogens, include *Aeromonas hydrophila*, *A. caviae*, *A. veronii*biovar*sobria*, *A. veronii* biovar *veronii*, *A. jandaei*, *A. trota* and *A. schubertii* (Carnahan, 1993).

Aeromonas hydrophila was one of vital species among other species due to its recurrent relationship with human infection; also the virulent and non-virulent strains within this species had been described. Likewise *A. hydrophila* encompassing a numerous strains which differ in their pathogenic potential (Metz, 2015).

Bloom and Bottone (1990) stated that only subset of *A. hydrophila* strains can cause human diseases, necessitate the importance of scheme to differentiate the pathogenic from those non-pathogenic strains. A number of virulence factors derived from *A. hydrophila* had been proposed in an effort to explain the pathogenesis of infections. Also the Aerolysin was considered as an evident sign of the virulence of *Aeromonas* spp. (Heuzenroeder *et al*, 1999). Many studies on molecular biology of the virulence genes of diarrheagenic *Aeromonas* revealed that those strains harbored aerolysin toxin gene (*Aer*) are potential diarrheagenia in nature (Pollard *et al*, 1990). So the aim of this study were to determine the prevalence of Aerolysin positive *A. hydrophila* in diarrhea patients and study its pathogenicity in mice model.

MATERIALS AND METHODS

Sample collection

Two hundred and fifty five fecal samples, 168(67.2%) from patients with diarrhea and 82(32.8%) from apparently healthy were collected from different age