RESEARCH PAPER International Journal of Medical Sciences (October, 2009 to March, 2010) Vol. 2 Issue 2 : 174-176

Persistence of Genetic Diversity of Pathogenic *Aeromonas hydrophila* Isolated From Different Milk Samples

T. MANJULA DEVI, V. SIVAKUMARI AND N. V. BASKAR

See end of the article for authors' affiliation

V. SIVAKUMARI
Department of Environmental and Herbal Sciences, Tamil University, Thanjavur (T.N.) INDIA

ABSTRACT

Milk is an excellent culture medium for many kind of microorganisms, being high in moisture, nearly neutral in pH and rich in microbial foods. But contamination of the milk by enteric pathogens, *Escherichia coli, Aeromonas hydrophila, Staphylococcus aureus, Yersinia enterocolitica* results in gastroenteritis, septicemia and other food borne diseases. The strains of *A. hydrophila* were obtained from the milk samples which were subjected to the RAPD fingerprinting analysis. *A. hydrophila* strains tested produced identieal prophiles and revealed the substantial wide genetic deiversity or high heterogenecity among the strains tested.

Key words : Hepatitis, Dengue, AIDS and ELISA

Accepted :* *September, 2009

Aeromonas has become new emerging pathogen in connection with diarrhea and other infections such as peritonitis, meningitis, septicemia, endocarditis, corneal ulcer, wound infections, urinary tract infection and conjunctivitis (Altwegg and Geiss, 1989; Kirov, 1993) and food is suspected as the vector in the dissemination of the pathogen.

Infections due to *Aeromonas* in immunocompromised hosts are generally severe. As the list of new genomospecies to the genus *Aeromonas* is still expanding, the clinical syndromes due to this organism are also evolving rapidly. Random amplification of Polymorphic DNA (RAPD) PCR is widely used in bacteriology for epidemiological and taxonomic studies (Szczuka and Kaznowski, 2004). Attention has been given to determine the incidence of haemolytic as well as proteolytic strains of *Aeromonas hydrophila* among milk samples. Further, molecular techniques have been applied to check the genetic diversity of the strains, isolated from milk samples.

MATERIALS AND METHODS

Milk samples were collected from the retail milk stores located in Thanjavur, Tamilnadu, for the detection of the pathogenic *A. hydrophila*. Pour plate technique was employed to enumerate the bacterial count. The milk quality was analysed by Methlele Blue Reductase Test (MBRT). The presumptive of *A. hydrophila* colonies were then subjected to Gram staining and series of biochemical tests such as motility. Kovac's oxidase, oxidation and fermentation, catalase, indole production, methyl red test, Voges - Proskauer test, nitrate reduction test, H2S production, Lysine decarboxylase and arginine dihydrose and cultures which matched typical reaction of *A. hydrophila* (MTCC 646) were confirmed as *A. hydrophila*. The strains of *A. hydrophila* were obtained from the milk samples which were subjected to the RAPD fingerprinting analysis (Delamare *et al*., 2002).

RESULTS AND DISCUSSION

Of the 10 milk samples, most of all the samples were contaminated with microorganisms, which was exhibited by the Methylene Blue Reductase test. The methylene blue decolouration was recorded within 90 minutes. It confirmed the poor quality of milk. The total heterotrophic bacterial count was analysed for all the milk samples. The incidence of *A. hydrophila* was recorded in Table 1 and the biochemical result was presented in Table 2. The strains were also screened for their proteolytic activity and observation was recorded in Table 3.

Random amplification of polymorphic DNA (RAPD) PCR for A. hydrophila:

The RAPD profile of milk isolates of *A.*