Abstract

The disease Listeriosis is also known as circling disease or Listerial abortion in animals mainly caused by *L. monocytogenes*. Of late, it has been recognized as an emerging food-borne zoonosis, with a common source epidemic potential and a nagging public health hazard. The disease condition arises mainly from the ingestion of contaminated food and water. Listeriosis is of great public health concern as the overall mortality rate in suspected groups is 30%.

It was found that there is a substantial scarcity of literature on epidemiology of this pathogenic organism particularly in the North East zone of India, in this need the present epidemiological study was carried out.

A total of 1550 samples constituting 1237 animal samples and 313 environment samples were collected from different commercial shops, animal farms, and natural sources located in different place of Assam, Tripura, Meghalaya, Nagaland, and Mizoram in the year 2008 to 2010. The isolation and molecular detection studies suggested positivity of 85 samples (5.48%) for *L. monocytogenes*. The confirmation of isolates was determined by subjecting to different biochemical tests like catalase, oxidase, fermentation of sugar; molecular tests like PCR assay for virulent genes, multiplex PCR serotyping, RAPD analysis and plasmid profiling; pathogenicity tests like hemolytic activity test, CAMP test, mouse lethality test and Anton’s test. Besides, isolates were also subjected to antibiogram analysis to verify the sensitivity pattern of the isolates to different antibiotics used commonly in human as well as animal treatment in the region. Also, a correlation was observed between the isolation and the meteorological data collected from the respective locations suggesting higher isolation rate of *L. monocytogenes* during summer season in the NEH region.

Thus, this epidemiological study of *L. monocytogenes* in animal and environment revealed that *L. monocytogenes* is significantly present in animals and environment of this region posing a great threat for human as well as animal health, as these recovered isolates showed significant pathogenic capacity while screening.

Thus, the results of this study will be helpful to attract the attention of people and researchers towards this emerging public health hazard in the NEH region.