# Molecular Epidemiology and Risk Factor Analysis of Cystic Echinococcosis in Livestock and Human Population - A One Health Approach

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## Abstract

Background: Cystic Echinococcosis (CE) is a neglected tropical disease (NTD) and serious zoonosis that is increasing day by day causing huge economic losses to public health and livestock sector. This study was designed to estimate the prevalence of Cystic Echinococcosis along with a detailed investigation of associated risk factors in livestock population of district Narowal, Pakistan. A total of 503 food animals (including 226 cows, 102 buffaloes, 98 sheep, and 77 goats) were inspected for hydatid cysts by conducting postmortem examination at slaughterhouses. Fertility and viability of collected hydatid cysts was assessed by microscopy and a final confirmation was done with conventional Polymerase Chain Reaction (PCR) using specie specific primers. A pre-structured questionnaire was used to collect baseline data and to identify the potential risk factors associated with this parasitic disease. The findings of this study revealed the presence of Echinococcus granulosus in food animals of Narowal, Pakistan with an overall prevalence of 8.15%. The prevalence of CE was highest in Cattle (12.83%) followed by buffalo (6.86%), sheep (4.08%) and goat (1.29%). In organ wise prevalence, two organs were found infected with hydatid cysts. The highest rate of infection was observed in liver (35.71%) followed by lungs (33.33%) and then involvement of both organs at the same time (20%). The present study shows that CE continues to be a One Health problem in Pakistan. Such Epidemiological findings could help in developing prevention strategies and control programs for Cystic Echinococcosis in Pakistan.



## Biography

Qamer Mahmood is a Veterinary Public Health Professional with focus on infectious disease Epidemiology, Zoonoses and One Health. He is currently working as Research Associate in a project on Cystic Echinococcosis in Punjab, Pakistan. He has studied DVM and Mphil in Epidemiology and Public Health from University of Veterinary and Animal Sciences, Pakistan.

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