World Academy of Science, Engineering and Technology
International Journal of Animal and Veterinary Sciences
Vol:13, No:07, 2019

Genetic Diversity of Mycobacterium bovis and Its Zoonotic Potential in Ethiopia: A Systematic Review

Authors : Begna Tulu, Gobena Ameni

Abstract : Understanding the types of Mycobacterium bovis (M. bovis) strains circulating in a country and exploring its zoonotic potential has significant contribution in the effort to design control strategies. The main aim of this study was to review and compile the results of studies conducted on M. bovis genotyping and its zoonotic potential of M. bovis in Ethiopia. A systematic search and review of articles published on M. bovis strains in Ethiopia were made. PubMed and Google Scholar databases were considered for the search while the keywords used were 'Mycobacteria,' 'Mycobacterium bovis,' 'Bovine Tuberculosis' and 'Ethiopia.' Fourteen studies were considered in this review and a total of 31 distinct strains of M. bovis (N=211) were obtained; the most dominant strains were SB0133 (N=62, 29.4%), SB1176 (N=61, 28.9%), and followed by SB0134 and SB1476 each (N=18, 8.5%). The clustering rate of M. bovis strains was found to be 42.0%. On the other hand, 6 strains of M. bovis were reported from human namely; SB0665 (N=4), SB0303 (N=2), SB0982 (N=2), SB0133 (N=1), SB1176 (N=1), and 1 new strain. Similarly, a total of 8 strains (N=13) of M. tuberculosis bacteria were also identified from animal subjects; namely SIT149 (N=3), SIT1 (N=2), SIT1688 (n=2), SIT262 (N=2), SIT53 (N=1), SIT59 (N=1), and one new-Ethiopian strain. The result showed that the genetic diversity of M. bovis strains reported from Ethiopia are less diversified and highly clustered. And also the result underlines that there is an ongoing active transmission of M. bovis and M. tuberculosis between human and animals in Ethiopia because a significant number strains of both type of bacteria were reported from human and animals.

Keywords : mycobacterium bovis, Mycobacterium tuberculosis, zoonotic potential, genetic diversity, Ethiopia
Conference Title : ICVE 2019 : International Conference on Veterinary Epidemiology
Conference Location : Toronto, Canada
Conference Dates : July 18-19, 2019