

Seroprevalence of bovine viral diarrhoea virus (BVDV) infection in cattle population in Iran: a systematic review and meta-analysis

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Abstract:

Bovine viral diarrhoea virus (BVDV) is an important pathogen correlated with reproductive, respiratory, and gastrointestinal disorders in cattle. Furthermore, it causes endemic infections and significant economic losses in cattle herds worldwide. This review was performed to determine the pooled seroprevalence of BVDV infection and related risk factors among cattle in Iran. Data were systematically gathered without time limitation until 1 December 2020 in the Islamic Republic of Iran from the following electronic databases: PubMed, Google Scholar, Science Direct, Scopus, Web of Science, Elmnet, Magiran, Irandoc, Scientific Information Database (SID), and Civilica. According to the preferred reporting items for systematic reviews and meta-analyses (PRISMA) and inclusion criteria, 28 eligible studies were obtained from various Iran areas. In total, the pooled seroprevalence of BVDV infection, using random-effect model, was estimated 52% (95% CI, 40.1–63.9) in cattle. According to serological detection methods, pooled seroprevalence was as follows: based on ELISA 53.9% and SVN 25.1%. The highest pooled seroprevalence of BVDV infection was in the southeast provinces of Iran (78.4%) and lowest pooled seroprevalence was in Southwest provinces of the country (28.5%). The pooled seroprevalence of BVDV infection in cattle ≤ 2 years was significantly lower than cattle > 2 years (OR = 0.606; 95% CI, 0.397–0.925), whereas the pooled seroprevalence had no significant difference according to other factors such as gender, herd size, and herd types. In conclusion, the pooled seroprevalence of BVDV infection among cattle in Iran is relatively high. The seroprevalence was different among geographical regions of the country. These results are desirable for managing the control programs of this infection in Iran.

Keywords: BVDV; Bovine; Iran; Prevalence.