

عنوان مقاله:

Isolation and Molecular Characterization of Clostridium perfringens Toxinotypes F & G in Diarrhoeic Sheep (Ovis aries) Flocks in Southeast of Iran

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نویسندگان:

Mojtaba Alimolaei - Department of Molecular Microbiology, Kerman branch, Razi Vaccine and Serum Research Institute, Agricultural Research, Education and Extension Organization (AREEO), Kerman, Iran

M Shamsaddini Bafti - Department of Anaerobic Bacterial Vaccine Research and Production, Kerman Branch, Razi Vaccine and Serum Research Institute, Agricultural Research, Education and Extension Organization (AREEO), Kerman, Iran

خلاصه مقاله:

Clostridial enteric diseases, called enterotoxemia, are caused by Clostridium perfringens toxinotypes in sheep and other ruminants. This study aimed to describe the molecular characterization of C. perfringens isolates in diarrhoeic sheep (Ovis aries) flocks in the southeast of Iran. Fecal/intestinal samples were collected from diarrhoeic (n=116), dead (n= 13), and healthy (n=63) sheep over four years (2016-2020) and subjected to bacteriological and molecular examinations. The C. perfringens isolates were typed by polymerase chain reaction targeting genes, namely 16SrRNA, CPA, CPB, ETX, IAP, CPE, and NetB. The overall prevalence of C. perfringens was 28.6% among the studied sheep, and there was a significant relationship between its isolation rate and diarrhea ($P<0.001$). The C. perfringens isolation rate also decreased with animal age ($P=0.012$) and was significantly higher in late winter and spring ($P=0.000$). The most prevalent toxinotypes were types A (52.4%), D (22.2%), and F (18.5%), in that order. Moreover, C, G, and B types were found in 4.2%, 1.6%, and 1.1% of the isolates, respectively, and no type E was detected. The CPE gene was detected in 32.3% of all isolates, and the diarrhoeic sheep were most likely to yield CPE+ strains of C. perfringens (93.1%). These findings highlight the importance of CPE+ strains of C. perfringens in sheep enteritis and suggest that the high presence of type F needs to be considered in new clostridial vaccines containing this toxinotype. It is noteworthy that the present study reported the isolation of C. perfringens type F, type G, and the CPE+ strains of type B from diarrhoeic sheep for the first time.

کلمات کلیدی:

Clostridium perfringens, Diarrhoea, Iran, Sheep (Ovis aries), Toxinotype

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