

Prevalence and Distribution of Verocytotoxigenic Escherichia coli (Vtec) Non-O157 Serotypes in Cattle in Abuja, Nigeria

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Abstract : Objective: The most frequently implicated E. coli serotype causing haemorrhagic colitis and haemorrhagic uraemic syndrome (HUS) is VTEC O157. However, non-O157 VTEC is now known to be as prevalent as VETC O157 infection (or even more) in most parts of the world. The objective of the study was to establish the occurrence of non-O157 VTEC serotypes in cattle in the Federal Capital Territory (FCT) Abuja, Nigeria. The level of significance of the infection with sex, age and season were also tested. Methods: The study was carried out in the FCT, Abuja, Nigeria which is located between latitude 8° and 9° 25' North of the equator and longitude 6° 45' and 7° 45' East of the Greenwich meridian. The cross sectional epidemiological method and multi-staged sampling technique were used in this study. Samples were collected from the freshly voided faeces of both apparently healthy and diarrhoeic cattle in selected abattoirs and cattle herds. Enriched samples were analyzed bacteriologically and biochemically after which they were characterised using commercially prepared latex agglutination test kits. Results: A total of 718 faecal samples from cattle were analyzed for the presence of VTEC non-O157. Thirty eight (5.23%) were positive for non-O157. There was no significant association ($p > 0.05$) between sex and infection with non-O157 VTEC in cattle. There was a significant association ($P < 0.05$) between age and infection with non-O157 VTEC in cattle. Calves were more associated than the adults. There was also a significant association ($P < 0.05$) between season and infection with non-O157 VTEC in cattle. The dry season was more associated than the wet season. Conclusion: The study established the occurrence and prevalence of non-O157 VTEC in cattle in FCT, Abuja, Nigeria. As a major food animal in Nigeria, infection in cattle provides an epidemiological causal association to the infection in humans. The result showed that warmer seasons (dry season) stimulate the presence of VTEC infection in animals and thus, as a consequence, increases the number of human cases. The prevalence was also higher in younger calves (< 6 months) probably as a result of undeveloped immune system.

Keywords : prevalence, distribution, Verocytotoxigenic escherichia coli (VTEC), non-O157 serotypes, cattle

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