ARE ALL ANIMALS NATURALLY INFECTED WITH BOVINE LEUKEMIA VIRUS EQUALLY INFECTIOUS? A QUANTITATIVE FIELD STUDY

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Bovine Leukaemia Virus (BLV) is an ubiquitous agent and horizontal transmission is attributed to handling practices realized in poor hygiene conditions. The aim of the study was to evaluate the natural transmission of BLV in dairy farms of Chile and to assess the difference between infective capacity virus’s in animals with PL and aleukemic bovine leukaemia virus (BLV).

Eleven farms were chosen and they were follow-up for 18 months, for the estimation of incidence and effective transmission rates. Blood samples of 2,450 animals and milk samples of 1,527 adult cows were taken. Animals younger than 6 months were excluded. The incidence rates for young and adult animals were estimated. The infected adult animals were classified as aleukemic infected (AI) and persisted lymphocitosis infected (PL), based on serological and hematological test results. For estimating the effective transmission rate a Generalized Linear Model (GLM) with log link and log (S*I/N) function as variable offset was used.

A general rate of incidence of 2.9 per 1000 animals/week at risk and 1.7 per 1000 animals/week at risk were estimated for adult and young animals respectively. The incidence rate in adult cows was larger on big farms (7.3 per 1000 animals/week at risk) in comparison with smaller (5.3 per 1000 animals/week at risk). Ten percent of the infected animals developed PL, the transmission rate for PL animals was 1.54 and for AI animals was 0.42, and therefore, the effective transmission rate was 3.65 times greater for PL animals.

The results of this study has implications for control strategies, transmission is higher in adult cattle and when within-prevalence is high, an alternative approach is to target elimination of PL animals first, to decrease spread of BLV.

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