Comparison of serological and molecular methods for caprine arthritis encephalitis diagnosis in goat kids with neurological symptoms.

PINHEIRO, R.R.1,2, BRITO, R.L.L.1,2, VERAS, A.K.A.1,2, RODRIGUES, A.S.1,2, SOUZA, K.C.1,2, ANDRIOLI, A.1, NASCIMENTO, C.B.3, SIDER, L.H.1
1. CNPC, Embrapa Goats and Sheep. 2. UVA, State University Vale do Acaraú.. 3. UFPI, Federal University of Piauí.
rizaldo@cnpc.embrapa.br

Abstract / Resumo:

The neurological form of the caprine arthritis-encephalitis (CAEV) usually affects kids aged 60-120 days. Clinical evaluation is not appropriate to determine the disease since symptoms can be confused with other illnesses. Serological and molecular methods can be used to the ultimate diagnosis. This study aimed to compare five methods, namely, Agar Gel Immuno Diffusion (AGID), Enzyme Linked Immunosorbent Assay (ELISA), Western Blotting (WB), RT-nested PCR and nested PCR, for the diagnosis of the caprine arthritis-encephalitis virus in seven goat kids aged between 87 and 103 days, showing neurological signs. Blood samples were collected to perform serological methods. Blood was used also to detect free genomic RNA and/or proviral, as well as cerebrospinal fluid (CSF). Our results showed that WB detected anti-CAEV antibodies in 100% of the animal, while ELISA and AGID detected specific antibodies and one and none of the samples, respectively. PCR-based methods were also useful to detect viral particles in all animals, especially if done concurrently in two different samples, as in this case, blood and CSF. Taken as a whole, we can conclude that AGID is not suitable for the early detection of CAE. By the other hand, WB showed to be a very sensible method and should be applied in individual animal, especially those who present clinical signs of the disease. Finally, PCR-based methods are also very useful, since they can detect viral particles even before seroconvertion.