COMPARISON BETWEEN IMMUNOBLOT AND ELISA ASSAYS FOR IMMUNODIAGNOSIS TO NEOTROPICAL ECHINOCOCCOSIS IN VULNERABLE POPULATIONS IN THE NORTHERN REGION OF BRAZIL

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Neotropical echinococcosis (NE), endemic to the northern region of Brazil, is a disease caused by *Echinococcus vogeli*. Immunodiagnosis for NE can minimize health complications and mortality by identifying potentially infected individuals while they are still asymptomatic. This study aims to compare the serological assays ELISA (EL) and Immunoblot (IB) (gold standard) in their ability to detect IgG antibodies against *Echinococcus* spp. in human serum samples from vulnerable populations in northern Brazil. A total of 960 serum samples collected between 2022 and 2024 were analyzed using the two assays. In 2022, 106 serum samples were collected in Porto Velho, Rondônia (RO), with no reactive samples in IB and 14 (13.21%) reactive in EL. In 2023, 530 samples were collected in Alto Juruá municipalities (AJ), Acre (AC), with 87 (16.41%) testing reactive in IB and 136 (25.66%) in EL. Also in 2023, 63 samples were collected in Porto Velho (RO), with 2 (3.17%) testing reactive in IB and 8 (12.7%) in EL. In 2024, 261 serum samples were collected in AJ (AC), with 109 (41.76%) testing reactive in IB and 112 (42.91%) in EL. The higher percentage of reactive samples in EL compared to IB may be due to the lower specificity of ELISA in comparison to IB. Both assays still need to be evaluated for cross-reactivity using an internal serum panel of other helminthic infections. Due to its lower specificity, ELISA serves as a good preliminary test to screen potentially reactive samples, considering its automation and ability to process a higher number of samples simultaneously. IB, being the gold standard, offers higher specificity; however, as an in-house assay, it requires more time and manual labor. Therefore, the combination of both assays could optimize time and labor requirements for serological screening of NE-vulnerable populations.

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