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البحث الثالث بحث مشترك منشور (غير مستبط من رساله)

الكشف المناعي عن داء المشوكات الكيسي للإنسان والجمال باستخدام مستضدات مختلفة لسائل الكيس العداري والجزيئات الأولية والطبقات الجرثومية

Immunological detection of human and camel cystic echinococcosis using different antigens of hydatid cyst fluid, protoscoleces, and germinal layers

المجلة:

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Abstract:

Background and Aim: Cystic echinococcosis (CE)/hydatidosis is one of the most prevalent neglected zoonotic diseases. It is initially asymptomatic and does not produce any clinical signs until the cyst becomes enlarged, causing localized pressure on internal organs and tissues. Therefore, the detection of *Echinococcus granulosus* antibodies is highly essential. This study evaluated the antigens of hydatid cyst fluid, protoscoleces, and germinal layers for efficient immunological diagnosis of CE in humans and camels.

Materials and Methods: Hydatid cyst fluid (FLc), protoscoleces (Psc), and the germinal layer (GLc) antigens were prepared from camel-lung hydatid cysts. In the same way, hydatid cyst fluid (FLh) and protoscoleces (Psh) antigens from human-liver cyst aspirate were produced. The comparative immunodiagnostic efficacy of the prepared antigens was verified using indirect enzyme-linked immunosorbent assay (ELISA), SDS-PAGE, and immunoblotting.

Results: ELISA proves that FLc and GLc antigens were higher than FLh and Psh antigens. This shows that binding reactivity in naturally infected human sera, camel sera, and Psc is the most potent, exhibiting 100% sensitivity with 78.26% and 76.47% specificity in camel and human sera, respectively. The CE prevalence using diagnostic Psc was 54.79% and 61.32% in tested human and camel sera, respectively. The electrophoretic profiles of all shared antigens showed similarities at 52, 41, and 22 kDa. Immunoblotting demonstrated common immune-reactive bands in all antigen types at 52 and 41 kDa against positive human and camel sera.

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Conclusion: This immunological study introduces camel hydatid cyst Psc as a potent diagnostic antigen and new immune-reactive fractions of 52 and 41 kDa for diagnosing hydatidosis in humans and camels.

Keywords: cystic echinococcosis, Human, Camel, Hydatid cyst antigens, ELISA, SDS-PAGE, Western blot.

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