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Paper Poster Session

Diagnostic parasitology

Simultaneous screening of serum anti-*Echinococcus granulosus* and *E. multilocularis* antibodies by ELISA

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Background: The tapeworms *Echinococcus granulosus* and *Echinococcus multilocularis*, causing cystic (CE) and alveolar echinococcosis (AE), respectively, are co-endemic in several geographic regions of the world. Multiple antigens currently used for commercial, serology-based assays display still some lack of sensitivity. *In vitro*-produced *Echinococcus multilocularis* metacestode vesicle fluid (EmVF) antigen has been suspected to be highly sensitive for the detection of antibodies specific for both *Echinococcus* species.

We determined the sensitivity and specificity of EUROIMMUN Anti-*Echinococcus*-ELISA (IgG) for the serological detection of *E. granulosus* and *E. multilocularis* infections.

Material/methods: We investigated a panel of 324 sera for the presence of anti-*Echinococcus* ssp.-specific IgG, including 55 CE and 49 AE of different disease stages, 50 healthy blood donors, 50 non-infectiological tumour patients, as well as 120 from patients with other parasitic infections.

Results: Investigation of pre-characterized sera from patients with clinically confirmed *Echinococcus* infections as well as controls revealed a sensitivity and specificity of 97% and 93%, respectively. No positive results were obtained using sera from patients with neoplastic malignancies. An overall cross of 23% was observed with other parasitic infections. Only a single serum was reactive in case of larval *Taenia solium* and *Schistosoma* ssp. infections, respectively. *Entamoeba histolytica* infections, however, showed no cross reactivity at all.

Conclusions: EUROIMMUN Anti-*Echinococcus*-ELISA (IgG) enables simultaneous screening for *E. granulosus* and *E. multilocularis* infections with excellent sensitivity and good specificity. A rather low cross reactivity was observed to parasitic infections relevant for a clinical differential diagnosis.