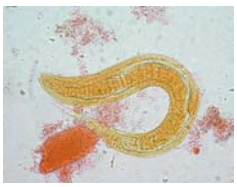
ASSESSMENT OF A NEW ELISA TEST FOR THE SERODIAGNOSIS OF STRONGYLOIDIASIS

(Test Strongyloides ratti, Bordier Affinity Products SA)



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Direct *Strongyloides stercoralis* diagnosis based on stool examination may be impaired in case of samples with low parasite density, and therefore lead to false negative results. This is an important drawback of the technique, because this opportunistic parasite may be responsible of fatal disseminated infections in immunocompromised hosts. In order to improve the reliability of the diagnosis, we evaluated an enzyme-linked immunosorbent assay (ELISA) using larval antigen of *Strongyloides ratti* (Bordier Affinity Products SA, www.bordier.ch).

Materials and methods

119 serum samples were tested :

- 50 non infected control sera from blood donnors.
- 11 samples from patients monoinfected with *Strongyloides. stercoralis* larvae.
- 58 samples from patients with other parasitic infections (Toxocariasis, Filariasis, Schistosomiasis, Ascaridiasis, Distomatosis, Hydatidosis, Amebiasis).

The result is negative when the absorbance of the analyzed sample is lower than the absorbance of the weak positive serum. The result is positive when the absorbance is higher than the absobance of the weak positive control.
A positive result should take into consideration potential cross-reactivities of other parasitic infections, the clinical symptoms and the endemic situation.

Results

A sensitivity of 100% was found with 11 sera from patients with larvae of *Stongyloides stercoralis* in stools

Presence of larvae of Strongyloides stercoralis	Negative result	Positive result
11	0	11

A specificity of 100% was found with 50 sera of blood donors (France)

Blood donors	Negative result	Positive result
50	50	0

A specificity of 69 % was found with 58 sera from patients with other parasitic infections

Other parasitoses	Negative result	Positive result
58	40	18

Other parasitic infection	Number of sera	Positive result
Toxocarosis	12	4
Hydatidosis	8	2
Ascaridiosis	2	0
Schistosomosis	6	1
Filariosis	10	5
Distomatosis	17	4
Amebiasis	3	2

Conclusion

According to the above data, this assay appears to be a reliable method for *Strongyloides stercoralis* diagnosis, even in case of stool specimens with low parasite density. However, false positive results occurred, due to cross-reactivity with other parasitic infections.

Because of this significant level of cross-reactivity, a positive serological result should lead to further investigations, like detailled clinical and epidemiological history, and thourough microscopic observation. Further exploration including combined serology should also be performed in order to target the parasite.

Ref :
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Loutfy MR, Wilson M, Keystone JS, Kain KC.Serology and eosinophil count in the diagnosis and management of strongyloidiasis in a non-endemic area. Am J Trop Med Hyg. 2002 Jun;66(6):749-52.