**Abstract**

**Introduction:**

Fascioliasis is a zoonotic disease caused by a parasitic trematode of the genus Fasciola. The disease has a global prevalence. Comparison of Nested-PCR with Indirect ELISA on the serum of suspects. It seems to be of great help in the proper diagnosis of fascioliasis.

**Method:**

A total of 70 human specimens including: definitive positive specimens, positive suspicious, negative specimens, other *helminths* (Toxocara, Strongyloides, Taenia, hydatid cyst, Trichinella and protozoan including: Toxoplasma, Leishmania which is negative for *Fasciola* infection), patients treated with ELISA positive It was analyzed by ELISA and nested-PCR.The PCR product obtained from amplification of rDNA-ITS1 fragment (using specific Forward and Revers primers) on human fasciol serum samples was examined by nested-PCR.

**Result:**

The agreement percentage of patients' results between ELISA and nested-PCR was 94.46% (0.6% Cohen's kappa coefficient; 0.05 P-value ≤) and no interaction with other parasites was observed. In this study, 44 out of 63 samples were positive by both methods (69.84%) that the treated individuals who referred in the second stage after treatment were not considered in this statistic and also the percentage of agreement between the results of the two techniques based on the residence of individuals ranged from 100 to 88.9%. (0.6 Cohen's kappa coefficient; P-value≤0.05). Contrary to the results of the other groups, no agreement was shown on the results of the treated group (Cohen's kappa coefficient0. 0.6; P-value ≥ 0.05). Statistical analysis was performed using SPSS version 26 (Chicago, IL, USA). Statistical analysis was performed using Cohen's kappa method (ratio of 0.6 ≤ kappa and P-value ≤0.05 indicates agreement).

**Conclusion:**

This study describes the agreement between ELISA and nested-PCR on fascioliasis serum samples and also the relationship between this agreement with clinical symptoms and location in endemic areas as well as based on treatment response and location. Similarly, more than 60% agreement was observed between the concordance results of the two methods with all the objectives set. Based on each of the objectives in the agreement percentage results, we showed that Nested-PCR can be a suitable method for following up patients' treatment and determining species. Using serum samples and a confirmatory method for ELISA results.

**Keywords**: Fasciola, Serum, Human, Nested PCR, ELISA