EVALUATION OF QUANTUM DOTS NANOBEADS BASED IMMUNOASSAY FOR DIAGNOSIS OF HUMAN HYDATIDOSIS

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Abstract- An immunodiagnostic lab-on-a-bead suspension microarray based on microbeads encoded with quantum dots (QDs) has been developed and validated for quantitative detection of human hydatidosis in serum samples. Immunodiagnosis has been found to be useful not only in primary diagnosis of cystic ecchinococcosis but also for the follow up of patients after treatment. The present study aimed to prepare and purify protoscolece antigen of E. granulosus and use it for evaluation of Quantum Dots Nanobeads Based Immunoassay for diagnosis of human hydatidosis in human serum samples. The study included sera from patients infected with hydatidosis (n=37), sera of patients with other parasites (n=25 and healthy negative sera (n=20). The results showed that using Traditional Sandwich ELISA; 9 out of 37 E. granulosis infected samples showed false negative results and the sensitivity of the assay was 75.5%. All the 20 negative controls were below the cut off value while 10 out of 25 of other parasites groups were at the border line of the cut off value giving 60 % specificity. Quantum Dots Nanobeads Based Immunoassay ELISA showed that, 34 of E. granulosus infected patients had high positive antigen concentration leading to sensitivity of 91.8% while the specificity was 88.8%. In conclusion, Quantum Dots Nanobeads Based Immunoassay is asuitable and applicable diagnostic method for diagnosis of Human ecchinococcosis.

Keywords- Quantum Dots, Nanobeads Based, Sandwich ELISA.