INVESTIGATION OFIL-4, IL-5, TNF-α AND IFN-γ LEVELS IN CYSTIC ECHINOCOCCOSIS AND FASCIOLIOSIS

[1]CUNEYT ALBAYRAK, [2]IREM GUVEN, [3]YUNUS EMRE BEYHAN

Department of Parasitology, Van Yuzuncu Yil University Faculty of Medicine
E-mail: yebeyhan@gmail.com

Abstract - Changes in Th1 and Th2 immune responses in cystic echinococcosis (CE) and fascioliasis provide information about the clinical, pathology and diagnosis of diseases. Therefore, it is very important to investigate specific cytokines, cytokine receptors and chemokines involved in the formation of immune responses in these diseases. Serum samples of 111 patients aged between 18-95 years who applied to Dursun Odabaş Medical Center of Yuzuncu Yil University were used as the material. After this stage, IL-4, IL-10, TNF α and IFN düzey levels were measured by ELISA according to the manufacturer's protocol. The results were evaluatedon the spectrophotometer and which immunological parameters were responded to in which infection were detected.Cytokine results were also evaluated according to patient age groups and genders. Chi-square and / or Fisher's exact test was used to investigate the relationship between cytokine response and disease, age and gender. IL-4 response was found in 34 (39.5%) of 86 patients, 26 (50.9%) of 61 seropositive patients and 8 (22.8%) of 35 patients in control group, for CE (P=0.032).IL-4 positivity was found in 32 (36.8%) of 87 patients, 22 (43.1%) of 51 seropositive patients and 10 (27.8%) of 36 patients in control group, for fascioliasis (P=0.016). IL-10 response was found in 29 (32.6%) of 89 patients, 23 (44.2%) of 52 seropositive patients and 6 (16.2%) of 37 patients in control group, for CE (P = 0005).IL-10 response was observed in 29 (33.3%) of 87 patients, 20 (39.2%) of 51 seropositive patients and 9 (25%) of 36 patients in control group, for fascioliasis (P=0.166).TNF-α response was detectedtotally in 29 (32.2%) of 90 patients, 13 (43.3%) of 30 seropositive patients, 11 (34.4%) of fascioliasis seropositive patients and five (17%) of 28 patients in control group (P = 0.110). IFN-γ response was found intotally 33 (36.6%) of 90 patients, 13 (43.3%) of 30 seropositive patients, 13 (41.9%) of 31 fascioliasis seropositive patients and, seven (25%) of 28 patients in control group (P = 0.297).While there was no correlation between cytokine responses and age groups, TNF-α and IFN-γ responses were significantly higher in male patients. The presence of Th1 and Th2 responses were observed in both infections. In conclusion, these cytokine levels may be useful in early detection of disease and recurrences.

Keywords - Cystic Echinococcosis, Fasciolosis, IFN gamma, TNF alpha, IL-4 and IL-10