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ESTIMATION OF INTERLEUKIN (17, 22) AND HEAT SHOCK PROTEIN-20 AMONG LEISHMANIASIS PATIENTS IN AL-NAJAF PROVINCE

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ABSTRACT : The present study deals with the Cutaneous leishmaniasis the most common form of the disease, it usually produces ulcers on the exposed parts of the body, such as the face, arms and legs. Cutaneous leishmaniasis (also known as oriental sore, tropical sore, chiclero ulcer, chiclero's ulcer or Aleppo boil) is the most common form of leishmaniasis affecting humans. It is a skin infection caused by a single-celled parasite that is transmitted by the bite of a phlebotomine sand fly. There are about twenty species of Leishmania that may cause cutaneous leishmaniasis. To estimate serum levels cytokines (IL17 and IL-22) among leishmania patients in Al-Najaf province as immunological markers and to estimate serum level heat shock protein 20 in leishmania patient and investigate the relationship of HSP 20 with IL-17 and IL-22. This study was conducted with (80) patients whose age ranges from (6-46) years, divided among 40 patients with cutaneous leishmaniasis (males 26) and (females 14), who have visited the dermatology unite at Al-Sader Teaching Hospital and Central Health Laboratory in Al–Najaf province, Iraq, for managing the disease and 40 (males 26) and (females 14) voluntary healthy as a control group. The study was carried out from November to April 2019. This study was performed to estimate serum levels of interleukin 17, interleukin 22 and Heat shock protein-20 in leishmania patients and control. It also estimate the level of IL-17, IL-22 and heat shock protein-20 for both male and female patients and control. The results showed a highly significant differences at (P<0.001) in all study parameters in comparison with the control. The result also showed the variances in the means of IL 17, 22 and HSP-20 among patients as compare with the control. All study groups show a highly significant variances (P<0.001) in the means of IL 17, 22 and HSP-20 among leishmanisis patients as compare with control. As a conclusion from this study, the importance of interleukin 17, 22 and heat shock protein-20 in Leishmaniasis patients can be used to detect the complications related to the disease and immunological effect among these patients.

Key words : Interleukin, heat shock protein, leishmaniasis.

INTRODUCTION

Leishmaniasis is caused by vector-borne protozoan parasites of the genus Leishmania and transmitted via infected female sandflies (*Phlebotomus* and *Lutzomyia*). The disease is endemic in more than 98 countries and an estimated 350 million people are at risk. The overall prevalence is 12 million cases and the annual incidence is 2–2.5 million cases. In most countries, the incidence numbers are probably underestimated because cases are not recognized and reporting is not mandatory (McGwire and Satoskar, 2014). Depending on the infecting species, an infection with Leishmania parasites can give rise to three clinical manifestations. The first is localized cutaneous leishmaniasis (CL) with single to multiple skin ulcers, satellite lesions, or nodular lymphangitis. The second is CL with mucosal involvement (MCL) and the third is systemic visceral leishmaniasis (VL) with involvement of internal organs, such as the liver, spleen, and bone marrow, which is lethal if not appropriately treated (Bailey and Lockwood, 2007). IL-17 is one of the best-studied cytokines in immunology, at least in part owing to its involvement in inflammatory pathology (Miossec *et al*, 2012; Kumar *et al*, 2019). Interleukin 17 (IL-17) and its closest relative, IL-17F, have recently drawn much attention in the field of immunology. IL-17 and IL-17F are expressed by a distinct type of T cells, T helper 17 cells and certain other lymphocytes. These cytokines play key regulatory roles in host defense and inflammatory diseases (Jin and Dong, 2013). Interleukin-22 (IL-22) has important functions in host defense at mucosal surfaces as well as in tissue repair. It is unique as a cytokine that is produced by immune cells, including T-helper (Th) cell subsets and innate lymphocytes, but acts only on non-hematopoietic stromal cells, in particular epithelial cells, keratinocytes, and hepatocytes (Rutz *et al*, 2013). It is one member of a family of cytokines termed IL-10–related cytokines that also includes IL-19, IL-20, IL-24 and IL-26 and was originally called IL-TIF, for IL-10–related T cell–derived inducible factor (Ouyang *et al*, 2011; Banerjee *et al*, 2018). Heat shock protein 20 (HSPB6) is a member of the small HSP family (HSPB)