DOI: https://doi.org/10.54393/pbmj.v5i11.826

PAKISTAN BIOMEDICAL JOURNAL

https://www.pakistanbmj.com/journal/index.php/pbmj/index

Volume 5, Issue 11 (November 2022)

IL-6 as an Inflammatory Marker in Hodgkin Lymphoma

Muhammad Akram Tariq[1*]

[1]Lahore Medical Research Center LLP, Lahore, Pakistan

akram@soe.ucsc.edu

ARTICLE INFO

How to Cite:

Tariq, M. A. (2022). IL-6 as an Inflammatory Marker in Hodgkin Lymphoma. Pakistan BioMedical Journal, 5(11). https://doi.org/10.54393/pbmj.v5i11.826

Hodgkin lymphoma (HL) is a lymphoid tumor that develops from embryological or post-germinal center B-cells. The disease was originally recognized in 1832 by Thomas Hodgkin. Globally, 0.4% of clinically diagnosed cancers in 2018 were caused by HL. Regardless of age, ethnicity, or location, the prevalence of HL varies. It's a particular kind of malignant tumor in which the cancerous Hodgkin and Reed-Sternberg (HRS) cells are surrounded by a significant cellular infiltration of immune cells (lymphocytes, macrophages, eosinophils, mast cells, plasma cells, and collagen cells), which also contribute to the microenvironment of the tumor. Numerous chemotherapy drugs and low-dose field radiation have been found to significantly reduce illness mortality [1].

High levels of cytokines that stimulate the immune system, such as interleukin (IL)-6, tumor necrosis factor (TNF), and eotaxin are produced by developing tumor cells and/or by reactive immune cells associated with tumors. These markers are anticipated to promote B-cell activation and related high-risk DNA-modifying activities, which will lead to the growth of B-cell lymphoma. IL-6 is a critical cytokine that stimulates the growth of hematological and solid tumors and is synthesized by a wide range of cell types, including fibroblasts, ECs, epithelial cells, and monocytes as hematological tumor lines. Through the activation of JAK, it stimulates the transcription factors STAT. In NHL, lower progression-free survival and overall survival rates have been linked to higher blood IL-6 levels, and IL-6 production in HL cell lines has been demonstrated. Numerous investigations revealed that IL-6 expression correlated with early onset vascular development events, indicating that it may be involved in angiogenesis [2].

Interleukin-6 (IL-6) is thought to play a crucial pathobiological function in classical HL among the biologic variables like cytokines. According to reports, adult patients with HL who have elevated serum interleukin-6 (IL-6) have better response rates, longer survival times, and B symptoms. TH-17 response may be elicited by HRS cells that express IL-6, but TH-2 response may be elicited by HRS cells that do not express IL-6. T-lymphocytes are known to be attracted by IL-6, and depending on how it interacts with other cytokines like TGF-beta, the lymphocytes may induce a TH-2 or TH-17 response. A significant cancer hallmark known as immune evasion can be brought on in cancer patients by the TH-2 response [3].

REFERENCES

[1] Ahmed R, Tariq F, Ashfaq J, Thakur W, Zafar S, Danish A, et al. The Outcome of Hodgkin Lymphoma with Reference to Prognostic Markers. Cureus. 2022 Aug; 14(8): e28421. doi: 10.7759/cureus.28421

[2] Hamed Anber N, El-Sebaie AH, Darwish NH, Mousa SA, Shamaa SS. Prognostic value of some inflammatory markers in patients with lymphoma. Bioscience Reports. 2019 Mar; 39(3). doi: 10.1042/BSR20182174

[3] Bhethanabhotla S, Tiwari A, Sharma MC, Vishnubhatla S, Bakhshi S. Prognostic significance of IL-6 in Hodgkin Lymphoma. The Indian Journal of Pediatrics. 2019 Jun; 86(6):551-4. doi: 10.1007/s12098-019-02902-x