

Correlation between Sirt 3 and IL6 expression in breast carcinoma and its different histopathological characteristics

المشتركون في البحث:

Mohamed H. Elmahdi, Mohamed Yassin Ali Osman, Alaa saad Abd elhamid

تاريخ ومكان النشر

Has been accepted for publication in Fayoum university medical journal, volume 16 issue 1, 2025

نوع البحث: بحث مشترك منشور دوليا لم يسبق تقييمه (غير مشتق من رسالة)

ملخص البحث:

Abstract

Introduction: Breast cancer (BC) remains a major issue for women health, with its incidence escalating dramatically over the past decade. This research investigates the expression of interleukin 6 (IL-6) and sirtuin 3 (SIRT3) in BC, focusing on their association with different clinico-pathological characteristics.

Methods: In This study we collected cases diagnosed as primary breast cancer in the period from January to December 2024 from general surgery department, pathology lab of faculty of medicine, Fayoum university and some private labs (collectively 100 cases) for cross-sectional analysis. The diagnosis of breast carcinoma was confirmed by histological evaluation of biopsy or specimens collected after surgical resection. Patients diagnosed with metastasis were excluded. The expression of SIRT3 and IL-6 was assessed as well as the clinic-pathological parameters of the tumors.

Results: The included sample were about 52 ± 11.5 years old. The larger portion of these patients were presented with invasive ductal carcinoma ($n=76$), with most tumors being grade 2 or 3 ($n=56$ and 42). The substantial correlation was identified between SIRT3 and IL-6 expression and the histological type of the tumor ($p = 0.02$). Lymph node status also showed a significant relationship with IL-6/SIRT3 expression ($p = 0.022$). Prognostic staging demonstrated a strong correlation with IL-6/SIRT3 status ($p < 0.001$). /moreover, the extent of lymphocytic infiltration, along with estrogen receptor (ER) status, progesterone receptor (PR) status, and molecular subtype, showed a profound statistical relationship ($p < 0.001$) with the expression patterns observed for IL-6 and SIRT3.

Conclusion: To sum up, this study found perfect agreement between expression of IL-6 and SIRT3 among patients with BC. The two parameters were positively expressed among the majority of patients with BC. In addition, SIRT3 and IL-6 showed significant association with tumor histological type, nodal status, prognostic stage, ER status, PR status, lymphocytic infiltration, and molecular subtype.

Keywords: IL-6, SIRT3, Breast cancer