

Detection of Breast Cancer Using Some Parameters with ELAISA Technique in Patients Al-Najaf Al-Ashraf

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ABSTRACT

Background: Binding of GATA proteins is among the six members of a transcription factor family. Contributing to the luminal differentiation of breast epithelium, alongside the development of the collecting system and The process of trophoblastic differentiation. **Methods:** The present study collected 160 blood samples, which were divided into two groups. The first group consisted of healthy women (40), while the second group comprised patients with breast cancer (120 women). **Results:** ELAISA techniques were employed to assess the prognosis of breast cancer based on serum parameters associated with immuno gene transcriptions. The immunomodulatory GATA, binding protein 3, is recognized as a transcription" factor that is significant in the differentiation of breast epithelial cells. Additionally, interleukin-37 (IL-37), alternatively designated as Interleukin-1 family member-7, (IL-1F7), is an anti-inflammatory cytokine that is critical for the attenuation of start-inflammatory cytokine synthesis and the inhibition of cancer cell growth. The statistical analysis of the immune markers (GATA3 and IL-37) indicated a significant relationship with cancer when comparing the 120 samples collected from patients to the 40 samples from healthy individuals. The results were highly significant, with a p-value of <0.004, in Najaf Al-Ashraf. **Conclusion:** All immune markers indicate the presence of cancer in the body, which confirmed the clinical signs that were verified, such as redness and breast spotting, which were closely associated with the disease.

Keywords: Safety, GATA₃, IL-37, Parameters.

Article Information

Received: January 18, 2026; Revised: February 20, 2025; Online: March 2026

INTRODUCTION

Binding of GATA proteins is among the six members of a transcription factor family. Contributing to the luminal differentiation of breast epithelium, alongside the development of the collecting system and The process of trophoblastic differentiation. Moreover, it is also recognized as the key regulator of type-2 helper T₂ cells. (1). The transcription factor GATA3 were encoded via GATA3 gene in humans. Research involving both animal models and human subjects proposes that it regulates a expression of the diverse array of clinically and biologically significant genes (2).

Situated close to terminus of short arm of the chromosome ten at position (p14), the GATA3 gene comprises (eight exons), and is

accountable for encoding two variants, specifically GATA3 variant1 and GATA3 variant2 (3). The Expression of GATA3 maybe regulated in part, or at times via "antisense RNA, GATA3-AS1", whose gene was located close to GATA3 gene on a short arm of chromosome ten at position (p14)(4).

The IL-1 family of interleukins is significant for the regulation of gene expression linked to "inflammation in "autoimmune diseases, "AIDs", in addition, IL-37 is identified as IL-1 family member 7 "((IL-1F7)), IL-1H4; and IL-1RP1" (5). It is a new anti-inflammatory cytokine which (immuno-regulatory) acts. It decrease the synthesis to antiinflammatory cytokines and

acts inhibitor therapeutically to inflammatory and responsible immune by decreasing the secrete of antiinflammatory cytokines (6). IL-37 acts in two ways, i.e' first decrease the producing of start-inflammatory' cytokines, second reducing the expression made of transcriptional cytokines, and via blocking the stimulate of kinase' signaling (7). The immunomodulatory roles of IL-37, along with pertinent clinical research focused on the protective roles of IL-37 in autoimmune diseases (AIDs), aims to inform the development of therapeutic approaches for the treatment of AIDs (8).

The aim of the study is to diagnose rapid and low-cost breast cancer in order to control cancer early.

MATERIAL AND METHODS

The experimental design

Immunological analysis ELAISA of (GATA3 and IL-37) was studied in tumor 'cells and 'stromal individually. serum were collected from 160 blood specimens were taken From all Najaf hospitals. The criteria for exclusion encompassed instances with incomplete data, as well as those that underwent chemotherapy' else radiotherapy, as well as taking into account age and natural breastfeeding.

Collected 160 samples patients included 120 women while 40 healthy ,were take (5ml) of blood was collected from the vien disposable syringe was used to directly collect the blood sample. This sample was then placed in a serum gel tube and allowed to rest for 30 minutes. The serum was prepared by centrifuging at 3000 rpm for 10 minutes and was kept frozen at -20°C, unless it was analyzed without delay and then modification used (9). The patients group, who suffer from the group included patients suffering from breast pain and palpable lumps, changes in breast skin color in the form of scattered spots, with intermittent fever in most patients, taking into account breastfeeding and age.

RESULTS

The statistical results of the immune markers (GATA3 and IL-37) from collecting (120) patient samples and (40) healthy samples showed a relationship with cancer when compared to the results of healthy individuals It was highly significant, with a p-value <0.004 as shown in Table (1). Moreover, the incidence among women who do not breastfeed their children was higher than among women who do, by 75%. In terms of age, the incidence was higher while 'women ≥ 50 years old compared' to women < 50' years' old, as shown in Table (2).

Table (1): The immunomarkers between patients and healthy groups.

Group Statistics			
Parameters	Groups breastfeed	Mean $\pm$ Std. Error	P-value
GATA ₃	control	1.2 $\pm$ 0.03	< 0.001
	Patients not breastfeed	2 $\pm$ 0.01	
	Patient breastfeed	2 $\pm$ 0.09	
IL-37	Control	0.95 $\pm$ 0.05	< 0.001
	Patients not breastfeed	2.35 $\pm$ 0.03	
	Patient breastfeed	1.96 $\pm$ 0.04	

Table (2): the immunomarkers between patients and age.

Parameters	Groups age	Ratio%
GATA3 and IL-37	Patients ≥50 years	75%
	Patients < 50 years	25%

DISCUSSION

The findings indicated that the level of GATA3 was elevated as measured by the ELISA reader, as shown in table (1). Among its various biological functions, GATA3 has recently been considered a significant regulator of luminal cell differentiation in 'mammary 'gland and as a marker for cancer differentiation, as noted by (10) There is substantial evidence suggesting that GATA3 contributes to inhibiting breast carcinogenesis and progression for cancer (11).

Conversely, there is limited understanding play of GATA3 at the outgrowth to breast' cancer 'BC' as opinion (12). In this study, demonstrate that the lack of 'GATA3 enhances translocation and invasion of neoplastic cells, although it does not affect cell proliferation, by modulating key molecules that are involved in tumor progression and metastasis (13 and 14). In addition to the regulation of Th1/Th2 differentiation and the differentiation/proliferation of luminal cells in the mammary glands, as well as tumor differentiation and progression, which has been primarily investigated in breast cancer (15). We have previously shown only slight variations in GATA3 expression between male and female breast cancer patients (16 and 17).

The increase in the IL-37 in the ELISA reader was due to cancer cells that stimulate the production of this marker as shown in table (2), which in turn inhibits mutations gene of cancer as this study agree with

opinions of Fang, Pan and NJ Kadhim, *et al* (18,19, 20). In contrast, significant expression of Interleukin-37 on Emergency Rocket Communications System (ERCs) conferred successive immune suppression, this leads to the ongoing secretion of 'IL-37 (21).

CONCLUSION

All immune markers indicate the presence of cancer in the body, which confirmed the clinical signs that were verified, such as redness and breast spotting, which were closely associated with the disease.

RECOMENDATION

It is essential to conduct these immune tests before surgery as they indicate accurate results, and any sign in the breast area appearing in a woman should be checked by a specialist doctor.

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