

How to Cite:

Abbas, R. H. S., Al-Shibly, I. K., & Alshalah, M. A. (2022). Immunological, bacteriological and genetic factors may modulate the risk of gallbladder disease among Iraqi patients. *International Journal of Health Sciences*, 6(S2), 15178–15182.
<https://doi.org/10.53730/ijhs.v6nS2.9010>

Immunological, bacteriological and genetic factors may modulate the risk of gallbladder disease among Iraqi patients

Rayeheen Hadi Saeed Abbas

Medical microbiology department, Babylon university, Hilla, Iraq
Corresponding author email: rayaheenhade@gmail.com

Dr. Ifad Kerim Al-Shibly

Medical microbiology department, Babylon university, Hilla, Iraq
Email: ifad_shibly@uobabylon.edu.iq

Dr. Mohend Abbass Alshalah

Medical microbiology department, Babylon university, Hilla, Iraq
Email: mohend_alshalah2@uobabylon.edu.iq

Abstract---Background: Gallstone disease(GSD) is a prevalent illness worldwide. Patients and methods: During a duration of 3 months October/2020 to December /2021, samples were collected from 160 patients diagnosed with gallstone disease by Ultrasound method, and 60 healthy individuals, who were attended Safer Al-Hussein Surgical Hospital /Karbala and Imam Al-Hussein Medical –City /Karbala. The specimens were collected from bile and an inner surface of the gallbladder with aseptically. The specimens were treated immediately after they reach to the laboratory following the standard laboratory procedures. The patient were examined by the surgery specialist. Results: resulting data shows a considerable variance ($P < 0.05$) between the condensation for IL-1 α in the blood of patients and healthy people, and there is a non-considerable difference ($P > 0.05$) in the concentration from VP in sera of subjects tested. Conclusion: elevation in IL-1 α -level and a non-considerable difference in VP condensation.

Keywords---cholecystitis, gallstone, IL-1 α , visfatin.

Introduction

GSD, affects about 90% globally[1]. the greatest popular offering indicator is top abdominal colicky suffering considerably starting in an epigastric area [2] all biliary tract disturbances end with GSD and cholelithiasis [3]. GSD may becomes infected by different microbes [4]. The hazard reasons owing to the illness are gender, fatness, fair, old age, DM, gestation [3]. GSD results in obstruction of the cystic channel through one or multiplied gallstone formation [5]. GSD has topographical and racial dissimilarities in its appearance [6]. the genetic burden influence cholesterol formulation, and fat excretion[7]. there is a great issue of genetic polymorphisms (SNPs) in order to cause calculus cholecystitis to start for cholesterol transporter[8]. the pro-inflammatory immune mechanics in this area was altered due to the existence of multiplied infectious vegetation [9]. these pro-inflammatory immune reaction and innate immunity as well had a significant part in defense technique in GSD [10].

Patients and Methods

During a period of 3 months October/2020 to December /2021, samples were collected from 160 patients diagnosed with gallstone disease by Ultrasound method, and 60 healthy individuals, who attended Safer Al-Hussein Surgical Hospital /Karbala and Imam Al-Hussein Medical –City /Karbala. The specimens were collected from bile and the inner surface of the gallbladder aseptically. The specimens were treated immediately after they reached the laboratory next to the criterion laboratory procedures. patients were examined by the surgery specialist.

Results

The results exhibited a considerable variance ($P < 0.05$) level of IL_1 α within the blood of patients and hygienic people, the results of the study recorded a rise in the value of IL_1 α , which reached (17.55) ng/ml where as it was recorded (11.29) ng/ml for health control table (1), figure (1).

Type of parameters	Patient	Control
Mean of IL_1 α	17.55	11.29
SD	5.94	0.47
Statistical analysis	T= 8.106, P< 0.0001	

Table (1) concentration of IL_1 α among patient and control

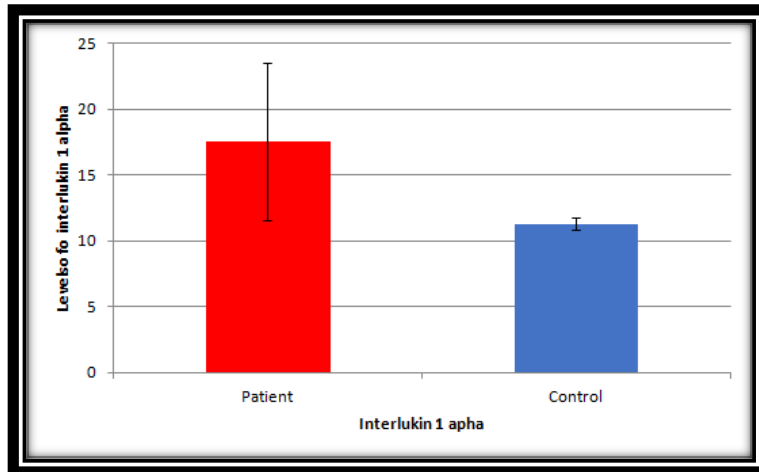


Figure (1) concentration of IL_1 α among patient and control.

Relationship of SERUM Level VISVATIN between Patients with CHOLECYSTITIS and Control Group

The results of the research showed that there are non-considerable differences ($P > 0.05$) in the condensation of VP in the blood of patients and hygienic people, the results of the study recorded a low the value of VP in patients, which reached (2.27)ng/ml where as it was recorded (2.35) ng/ml for health control. Table (2), figure (2).

Type of parameters	Patient	Control
Mean of VP	2.27	2.35
SD	0.95	0.85
Statistical analysis	T= -0.36, P= 0.359	

Table (2) Concentration of VP among patient and control

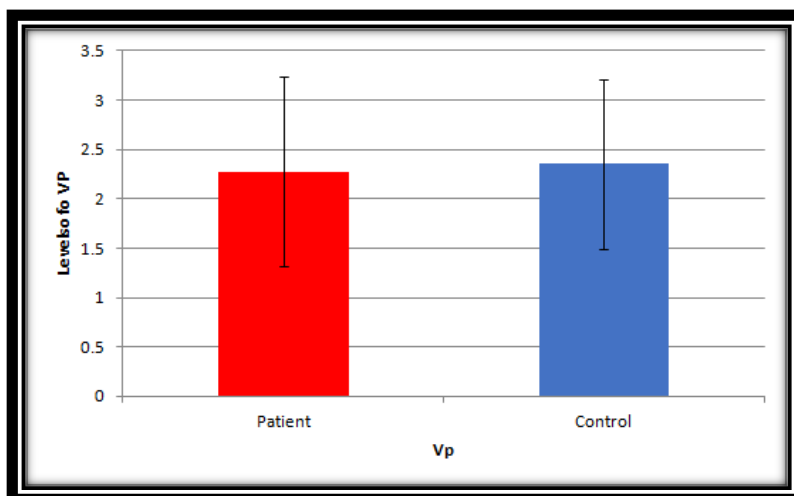


Figure (3.5) concentration of VP among patient and control

Discussion

IL-1 α is manufactured fundamentally through activating macrophages. It possessed hematopoietic activity while playing one of the centric roles in the organization of the immune reaction. A potential explication for this raise found un current research identifies with otherwise researches[11,12,13]. Also, The result of such studies has been proportionate with those reports that recorded by these studied. Most powerfully IL-1 synthesis-stimulate factor includes LPS [13]. For those who have cholelithiasis involved herein, IL-1 is an important immunomodulator [11]. the manufacturer of the cytokine might consider terminal recognition of gallbladder epithelium[14]. The result of IL-1 α intensity in gallstone patients' sera shows important elevation compared to hygienic controls.[15]. this eventually aggravate the inflammatory reaction[16].

Visfatin(VP) is a cytokine implicated in sever inflammation. Its plasma level is a prediction agent for GSD. The finding related to the level of visfatin in cholecystitis patients in the current study exhibited comparable serum visfatin levels between patients and control[17]. The result of the current research and other studies suggests that the VP level could have become a perfect biomarker for GSD[18]. visfatin is predominantly exist a upper level in PBMCs[19].

Conclusion

The inflammatory response in cholelithiasis predisposes to elevation in IL-1-like activity. There is a non-considerable difference ($P > 0.05$) in VP level in the blood of patients and hygienic people, there are significant differences ($P < 0.05$) in the concentration of IL-1 alpha in sera patients.

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