



# Effect Of Gout Disease on Some Hematological Parameters at Male in Karbala City

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## Abstract

The study aims at studying the effect of gout disease on blood variables in outpatients with gout disease in alhussein teaching hospital in karbala 70 Blood samples were taken from a variety of patients of various ages (30-80 years) from male only and Thirty blood samples were collected from normal individuals as a control group. Hematological measurement showed In comparison to the control group, there were no significant differences in PCV, Hb, or RBCs., while significant differences in ESR and WBCs were recorded, compared with control group.

**KeyWords:**gout disease, packed cell volume and hemoglobin concentration

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## Introduction

Gout disease is Purine Metabolism disorder result from accumulate of uric acid crystals in serum in high levels that accumulate inside of joint and lead to occur pains and inflammations(1) . in some cases lead to sedimentation of Monosodium Crystals in tissues in large amounts or accumulate under skin to form Tophi calcification( 2). Gout disease occur in male more than female especially womenPremenopausal(3). Gout disease infect different joints in the body especially Big Toe, Hyperuricemia considered one of signs in identification of gout disease (4). Uric acid result from some of foods that have high levels of purines and alcohols or because of in ability of body in excretion of urine (5) . in some cases gout disease result from some of pathological cases such as Hypertension, diabetes, dyslipidemia, truncal obesity, and an increased risk of cardiovascular disease (6). Uric acid considered of antioxidant about half million of antioxidant in plasma come from uric acid (7). Other studies showed that there are relationship between gout disease and poisoning in lead (8).

## Materials And Methods

### Study Groups And Blood Samples Collection

The study lasted in alhussein hospital in karbala city. There were 70 patients male only and 30 healthy controls. About 30-80 years old and taken 5ml of blood sample and put in anticoagulant tube for blood parameters test.

### Blood Parameters Tests

Blood Parameters were done by using automated hematoanalyzer (Sysmex xp300 B1269).The blood parameters were included: White blood cells and red blood cells count, packed cell volume, hemoglobin concentration (Hb), and packed cell volume

### Measurement Of ESR

We utilized a Westergren tube with a length of 300mm (open on both ends) and a diameter of 2.5mm. 4 parts blood were mixed with one part anticoagulant

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(3.8 percent trisodium citrate solution) (0.5 ml of anticoagulant is added to 2 ml of blood). The mixture was pulled up to the zero mark into a Westergren tube, which was then positioned upright in a stand with a spring clip on top and rubber on the bottom. At the end of one hour, the level of the top of the red cell column was measured(9).

**Statistical Analysis**

The results were presented as mean s.e.m. and subjected to one-way analysis of variance. ANOVA LSD was utilized to specify the significant difference between means in the post hoc test, and IBM SPSS Program version 20 was employed for data analysis. (10).

**Results**

**Table 1: effect of gout disease on some of hematological parameters Mean ±SE**

	ESR mm/hr	WBC 103/mm3	RBC 106/mm3	g/l Hb	PCV%	
control	A 11.79±3.93	A 6.47±1.90	A 4.56±0.60	A 13.78±1.26	A 40.88±3.51	30
Patients	B 28±26.9	B 8.13±3.73	A 4.56±0.88	A 13.62±2.89	A 40.92±6.87	70

Insignificant differences at (p > 0.05)  
 At (p0. 05), different letters represent a significant difference.

**Discussion**

In this investigation, the difference in packed cell volume between the patient and control groups was found to be minor. This research is in agreement with (11). (12). Also, the difference in hemoglobin between the patient and control groups is small. This research is in agreement with (13) (14). In addition, the difference in red blood cells between the patient and control groups is small. This research is in agreement with (15). Despite the fact that there is a large increase in white blood cells in the sick group when compared to the control group, this study supports (16) (17). (18). Leukocytosis is increase in white blood cells as result occur different inflammations in the body such as rheumatoid arthritis or occur increased in white blood cells as result increase in Neutrophil and Monocytes that lead to kill of foreign materials , gout disease lead to increase in white blood cells (19). (20) showed that increase in white blood cells attachment with increase in time of disease , migration of white blood cells from joints attachment with presence of chemo attractant and increase in sediment of Monosodium urate crystals. Results of present study appeared significant increase in erythrocyte sedimentation rate in patient group compared with control group. Results this study due to damage of body tissues as result formation Monosodium urate crystals that

effect in tissues such as knee joint that lead to inflammation of tissues and sedimentation of red blood cells this study agreement with (19) (21). In normal cases red blood cells don't accumulate together because of negative charge but in pathological cases At occur inflammation in the body occur increased in proteins secreted from liver in the blood, surface red blood cells carry negative charge therefore red blood cells are disharmony among them, but at secretion of proteins in blood that carry positive charge occur equivalent in charge between red blood cells and proteins therefore red blood cells gather together and occur sedimentation of red blood cells (22). Also increase of level of immunoglobulin's lead to accumulate of red blood cells (23). ESR test effected by size and shape of red blood cells, plasma components, sex, age, anemia and renal failure (24). RSR increase with increase in age as result occur disorders in organs and tissues and infection of persons in rheumatoid arthritis, gout disease and different inflammations that lead to sedimentation of red blood cells (25) (26). Increase in weight of persons lead to increase in pressure on joints that lead to occur inflammations and increase in ESR, also increase in temperature lead to activation of inflammatory processes in body and secretion of proteins that lead to increase in ESR (27)(28).

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