The present study was designed to investigate changes occurring in hematological, and biochemical changes in patients suffering from hyperthyroidism. A total number used was 170, patients and healthy subjects of both sexes, males and females. The total number of patients was 130; 100 females and 30 males, while the number of control subjects was 40. The ages of all subjects ranged between 20 years to 55 years. It was also found that percentage of affected females (76.93%) more than that of affected males (23.07%).

Concerning haematological changes, studying red blood corpuscles count (RBCs), hemoglobin concentration (Hb), and packed cell volume (PCV) showed a significant increase ($P<0.01$) when compared with healthy subjects. In addition, values of hemoglobin electrophoresis which included adult hemoglobin (HbA), adult hemoglobin2 (HbA2), and fetal hemoglobin (HbF) showed non significant difference when compared with control subjects. Results of erythrocyte sedimentation rate (ESR) and white blood cells count (WBCs) were also recorded non significant difference in a comparison with those healthy subjects.

Biochemical changes in serum, total serum protein (TSP) and serum albumin levels pointed out significant decrease ($P<0.01$) in hyperthyroid subjects, while serum globulin values showed non significant decrease when compared with those control subjects. More over, the present study was also involved determination of sodium (Na$^+$) and potassium (K$^+$) levels in both serum and urine samples of hyperthyroid patients. Sodium values showed significant increase ($P<0.01$) in both serum and urine samples. While, results of potassium showed non significant decrease in both serum and urine samples of hyperthyroid subjects when compared with control subjects. Total serum cholesterol levels showed significant decrease ($P<0.01$) in comparison with control subjects. In addition, results of serum triglycerides showed significant decrease ($P<0.01$) when compared with those healthy subjects. In view of the changes summarized, the increase or decrease in some hematological and biochemical parameters may be attributed to hyper metabolic state which arise due to higher production of thyroid hormones which, in turn, affect most of body tissues.