

**Results.** Serum of male patients (n = 45) was examined, at specialized laboratories of Iraq in 2019, the age of participation about 24-52.

Descriptive Statistics shows values; all the results mean  $\pm$  SD were determined Vit.D ( $37.3 \pm 16.12$ ), total testosterone shows the value of ( $8.8 \pm 6.07$ ), stimulating hormone-binding globulin (SHBG)  $16.28 \pm 8.47$ , Free Testosterone ( $0.33 \pm 0.25$ ).

All the results are statistically determined, and p-value  $< 0.05$  used a significant marker or impact of two correlations.

Patient with a parathyroid and liver disease, who have kidney failure showed that low of vitamin D3 consequently low of testosterone level and hypo sexual disease.

Group of healthy persons showed that normal levels of vitamin D3 and show normal levels of testosterone, both total and free.

**Conclusions.** VitD has been suggested to play a role in male sexuality, mainly exerting a beneficial effect on semen quality, in the present study in men from the general population find association between VitD status and circulating testosterone levels, VitD exerts a beneficial effect on semen quality, particularly on sperm motility, which is probably driven by the modulation of factors involved in spermatozoa function, namely, calcium homeostasis

#### References

1. Haimi, M. Vitamin D deficiency/insufficiency from childhood to adulthood: insights from a sunny country / M. Haimi, R. Kremer // World J Clin Pediat., 2017. – T.6(1). P.1–9.

## THYROID DISORDER AND ITS EFFECT ON DIABETES

**Al-Kinani Alla Raed Shakir**

Yanka Kupala State University of Grodno, Belarus

Department of biochemistry

Supervisor – PhD, assistant professor Tratsiakova Volha

**Actuality.** Through the hormones it produces, the **thyroid** gland influences almost all of the metabolic processes in your body. Thyroid disorders can range from a small, harmless goiter (enlarged gland) that needs no treatment to life-threatening cancer. The most common thyroid problems involve abnormal production of thyroid hormones. Too much thyroid hormone results in a condition known as hyperthyroidism. Insufficient hormone production leads to hypothyroidism [1].

**Purpose.** Identify correlation between thyroid malfunction owing to diabetes.

**Materials and methods of research.** Fifty samples which included diabetes type 2 adults, hyperglycemic patients were analysed. Fasting blood samples were collected in sodium fluoride and potassium oxalate mixture in the ratio of 1:1 at concentration of 4 mg mixture per ml of whole blood. Plasma was obtained by centrifuging the blood at 2000 rpm for 10 min. We used Systronics and Hans 202

filter colorimeters; and Beckman double beam Model-25 and Shimadzu micro-flow CL-750 spectrophotometers. Hexokinase kit was obtained from Sigma Chemical Company USA and GOD-POD from Accurex, India. All other reagents were of analytical grade. All done in Al-Dewantah Central Hospital- Iraq.

**Results.** The concentration of glucose increase with the increasing the concentration of T3, T4. Increased glucose output from liver is the pivotal reason for the induction of hyperinsulinemia, induction of glucose intolerance, and development of peripheral insulin resistance. Glucose tolerance in thyrotoxicosis is caused by elevated hepatic glucose output along with upregulated glycogenolysis. This phenomenon is responsible for worsening of subclinical diabetes and exaggeration of hyperglycaemia in T2DM. Thyrotoxicosis may lead to ketoacidosis also due to elevated lipolytic actions and increased hepatic  $\beta$  oxidation.

**Conclusion.** In internal medicine, it is repeatedly proven that the association between thyroid dysfunction and diabetes mellitus is evident. Thyroid dysfunction chiefly comprises hypothyroidism and hyperthyroidism although the entity belongs to the same organ but with vast difference in pathophysiology as well as clinical picture.

#### References

1. Coller, F.A. Effect of hyperthyroidism upon diabetes mellitus: striking improvement in diabetes mellitus from thyroidectomy / F.A. Coller, C.B. Huggins // Annals of Surgery, 1927. – T.86(6). P. 877–884.

## INDETERMINATE EFFECTS OF VITAMIN D

**Al-Zarkooshee M. S. S.**

Yanka Kupala State University of Grodno, Belarus

Department of biochemistry

Supervisor – PhD, associate Professor Kuzniecowa O. E.

**Relevance.** In recent years, interest in the effects of vitamin D has increased, as a number of studies have revealed a connection between its low values and an increased risk of certain pathologies, including certain types of cancer, infections, autoimmune diseases, cardiovascular diseases, mental disorders, and pregnancy complications [1].

**Purpose of the study.** Assessment of vitamin D deficiency in patients of the Republic of Iraq and identification of factors causing its decline.

**Material and methods.** The study was performed at the Grodno State University and the Central Health Laboratory (Sheikh Zayed Hospital, Iraq) in 2019. 150 patients (20-81 years) were examined (76 men – 50.6%, 74 women – 49.4%): 30 patients with liver diseases, 30 – chronic renal failure, 30 – with arthritis, 30 – tumor processes, 30 – with thyroid pathology. An immunological and biochemical study (the level of vitamin D, alpha-fetoprotein, parathyroid hormone, rheumatoid