

## GIPOTIREOZ HOLATIDAGI BEMORLARDA TIREOID GORMONLARINIG METABOLIK O'ZGARISHLAR ORQALI JIGAR STRUKTURAVIY O'ZGARISHLARIGA TA'SIRI.

Talenova Vasila Abdikarimovna  
ORCID: <https://orcid.org/0000-0003-4121-4462>;  
e-mail: [msbekzus@gmail.com](mailto:msbekzus@gmail.com)  
Ilmiy rahbar: Alieva Anna Valeryevna, t.f.d.  
ORCID: <https://orcid.org/0000-0002-4921-4494>;  
e-mail: [annaalieva@yahoo.com](mailto:annaalieva@yahoo.com)

Akademik Y.X. To'raqulov nomidagi Respublika ixtisoslashtirilgan endokrinologiya ilmiy-  
amaliy tibbiyot markazi, 100125, O'zbekiston, Toshkent

**Dolzarbliqi.** Metabolik bog'liq bo'lgan jigar yog'li kasalligi dunyo miqyosida keng tarqalib borayotgan jigar surunkali kasalliklaridan bo'lib, jigarda strukturaviy o'zgarishlarini keltirib chiqaruvchi asosiy omillaridan biridir. Qalqonsimon bez gormonlari jigardagi moddalar almashinuvi jarayonlarida beta-1 tireoreseptorlar orqali ta'sir ko'rsatishini hisobga olgan holda, gipotireoz holatidagi bemorlarda metabolik o'zgarish markerlarinig jigar strukturaviy o'zgarishi bilan bog'liqligi hanuzgacha to'liq yoritilmagan.

**Tadqiqot maqsadi:** Qalqonsimon bez faoliyatini baholovchi gormonlar (TTG, erkin T3, erkin T4 va ularning nisbati) metabolik ko'rsatkichlar orqali jigar strukturaviy o'zgarishlari (FibroScan ko'rsatkichlari) bilan bog'liqligini o'rganish.

**Tadqiqot materiallari va usullari.** Jami tekshiruvdan o'tgan bemorlar soni 93nafarni tashkil etadi, shulardan 63nafariga FibroScan tekshiruvi o'tkazilgan. Qalqonsimon bez faoliyati (TTG, erkin T4, erkin T3, erkinT3/erkinT4), IMT, HOMA-IR va lipid profili tekshirilgan. Qalqonsimon bez faoliyati bo'yicha bemorlar gipotireoz (n=48) va eutireoz (n=45) guruhlariga ajratilgan.

**Natijalar va muhokama.** Tireoid statusi bo'yicha erkin T3 Fibroscan CAP parametri bilan aloqadorligi aniqlangan ( $p=0,249$ ;  $p=0,051$ ). Jigar fibrozi IMT( $p=0,337$ ;  $p=0,007$ ), triglitseridlar ko'rsatkichlari ( $p=0,281$ ;  $p=0,032$ ) bilan bog'liqligi aniqlangan. IMT ( $p=0,584$ ;  $p<0,001$ ), HOMA-IR ( $p=0,506$ ;  $p<0,001$ ) va triglitseridlar ( $p=0,366$ ;  $p=0,005$ ) jigar steatozi holatining prediktori sifatida aniqlangan.

**Xulosalar.** Tireoid gormonlarining bevosita jigar strukturaviy o'zgarishiga ta'siri aniqlanmadi. Lekin gipotireoz holatidagi bemorlarda metabolik o'zgarishlar-IMT ortishi, insulinrezistentlik va gipertriglitseridemiya orqali ta'siri jigar strukturaviy o'zgarishlarining (steatoz va fibroz) rivojlanishida muhim ahamiyatga ega ekanligi aniqlandi.

## THE EFFECT OF THYROID HORMONES ON STRUCTURAL CHANGES IN THE LIVER THROUGH METABOLIC ALTERATIONS IN PATIENTS WITH HYPOTHYROIDISM.

Talenova Vasila Abdikarimovna  
ORCID: <https://orcid.org/0000-0003-4121-4462>  
e-mail: [msbekzus@gmail.com](mailto:msbekzus@gmail.com)  
Scientific Supervisor: Alieva Anna Valeryevna, Doctor of Medical Sciences (D.Sc.)  
ORCID: <https://orcid.org/0000-0002-4921-4494>;  
e-mail: [annaalieva@yahoo.com](mailto:annaalieva@yahoo.com)

Republican Specialized Scientific and Practical Medical Center of Endocrinology named  
after Academician Yo.Kh. Turakulov, Tashkent, 100125, Uzbekistan

**Abstract.** Metabolic dysfunction-associated fatty liver disease is one of the most widespread chronic liver diseases globally and is one of the main factors causing structural changes in the liver. Considering that thyroid hormones influence metabolic processes in the liver through beta-1 thyroid receptors, the relationship between markers of metabolic changes and structural liver alterations in patients with hypothyroidism has still not been fully clarified. To investigate the relationship between thyroid function hormones (TSH, free T3, free T4, and their ratio) and structural liver changes (FibroScan parameters) through metabolic indicators. A total of 93 patients were examined, of whom 63 underwent FibroScan assessment. Thyroid function (TSH, free T4, free T3, free T3/free T4), BMI, HOMA-IR, and lipid profile were evaluated. According to thyroid function status, patients were divided into hypothyroid (n=48) and euthyroid (n=45) groups.

According to thyroid status, free T3 was found to be associated with the FibroScan CAP parameter ( $\rho=0.249$ ;  $p=0.051$ ). Liver fibrosis was associated with BMI ( $\rho=0.337$ ;  $p=0.007$ ) and triglyceride levels ( $\rho=0.281$ ;  $p=0.032$ ). BMI ( $\rho=0.584$ ;  $p<0.001$ ), HOMA-IR ( $\rho=0.506$ ;  $p<0.001$ ), and triglycerides ( $\rho=0.366$ ;  $p=0.005$ ) were identified as predictors of hepatic steatosis.

No direct effect of thyroid hormones on structural liver changes was identified. However, in patients with hypothyroidism, metabolic alterations—such as increased BMI, insulin resistance, and hypertriglyceridemia—were found to play a significant role in the development of structural liver changes (steatosis and fibrosis).

**Key words:** Metabolic dysfunction-associated fatty liver disease, hepatic steatosis, hypothyroidism, FibroScan, TTG, insulin resistance, hypertriglyceridemia.