

WAYS FOR REDUCING OVERWEIGHT AND OBESITY IN CHRONIC LIVER DISEASES

Djumaev B.Z.

PhD., Bukhara State Medical Institute, Folk Medicine and
Department of Occupational Diseases

SUMMARY

The Bukhara Regional Multidisciplinary Clinical Medical Center studied 98 patients with chronic liver disease, overweight and obesity who were treated in a hospital setting. Excess body weight and obesity in chronic liver disease have benefited from Ibn Sina's health interventions in practice. Slightly more ADRB3 (rs4994) Trp 64 Arg gene 2 genotypes in patients with primary chronic liver disease overweight and obesity Trp / Trp 55%, Trp / Arg in 45% of cases, ADRB2 in patients with secondary chronic liver disease overweight and obesity (rs1042713) The A> G, AG genotype occurred in 62.5% of cases and the Trp / Trp genotype in the highest 75% of cases. In patients diagnosed with overweight and obesity in tertiary chronic liver disease, the C / C genotype of the PPARG2 (rs1801282) gene was reported to be at most 68.7% of cases, while the G / G genotype was almost undetectable.

Keywords: chronic liver disease overweight, obesity, health measures, nutrigenomics, gene ADRB3 (rs 4994), gene ADRB2 (rs1042713), gene PPARG2 (rs1801282).

Despite the recent progress in the treatment of chronic diffuse liver diseases (CDLD), such cases are rare in clinical practice, for which it is impossible to prescribe etiotropic therapy or for other reasons, and at the same time it is necessary to slow down the development process. Traditionally, drugs belonging to the group are used for this purpose. Hepatoprotectors, which should increase the resistance of the liver to pathological effects, strengthen its neutralization function by activation. Various enzyme systems (including cytochrome P450 tracks and other microsomal enzymes) also contribute. Restoring various functions, thereby slowing down the progression of the disease. Given that they do not directly affect the etiology of the disease, the main direction of action of the drugs. Hepatoprotective group is an effect on the main pathogenetic mechanisms of liver diseases. O.E. Galchenko, V.A. Morozova, A. R. Babaeva. [2015] Liver diseases are an important clinical, epidemiological and socio-economic problem. Among diseases of the digestive system. Recently, the ten-year practical health care of most countries records an increase in the incidence of chronic hepatitis and liver cirrhosis (LC), mainly among people of working age Galimova S.F.[2012].

For this purpose, traditionally used drugs belonging to the group of necessary hepatoprotectors have the effect of increasing the pathological resistance of the liver, enhance its neutralization, work by activating various enzyme systems (including cytochrome P450 and other microsomal system enzymes), and also contribute to the restoration of various functions from damage, thereby slowing down the development of diseases. O.E. Galchenko, V.A. Morozova, A. R. Babaeva. [2015]

Liver diseases are one of the most common groups of diseases, and this is any damage to anatomical structures that do not go outside the organ. To treat them, drugs of various pharmacological mechanisms aimed at reducing pathological processes or restoring

physiological processes are required. Normal microflora participates in the formation of the functional activity of the immune system and maintaining it in this state, but in turn, the immune system participates in the control of the normal microflora of the body in terms of quantity and quality [Nuraliev N.A., 2001; Ignatov P.E., 2002; Bektimirov A.M-T., 2008; Garib F. Yu., 2012].

However, despite many attempts to improve treatment outcomes and patient survival, the drugs used in almost 40% of patients with severe liver damage fail to achieve clinically significant improvement. (Burra P., 2013, Maevskaia M.V., 2013).

In this regard, there is a continuous search for ways and means of increasing the effectiveness of pathogenetic therapy of exogenous toxic liver damage and using drugs with antioxidant and antihypoxant activity. (Petrov V.I., 2014, Ostrovsky O.V., 2013, Kosolapov V.A., 2015).

Despite the prevalence of liver diseases, all the pathogenetic mechanisms of the chronic process of these diseases have not been sufficiently studied. One of the widely accepted points of view is that different enzymatic activity of blood serum plays an important role in this process. As one of the reasons for the change in enzymatic activity, a violation of the mechanisms of immune regulation, which is the basis for the development of chronic diffuse liver diseases, is considered. Participation in this process is the most important of immunity. One of the cytokines involved in fibrogenesis is interleukin-13 [Ramalingam T.R., 2016].

PURPOSE

To study and analyze the distribution of genes and genotypes of chronic liver diseases according to the degree of overweight and obesity.

MATERIALS AND METHODS

98 overweight and obese patients with chronic liver diseases treated in various departments of the multidisciplinary medical center of Bukhara region were examined. Out of 98 patients, 30 were divided into the control group and 68 were divided into the main group. Patients in 68 main groups were divided into 3 groups based on overweight and obesity index of chronic liver diseases. 38 patients were diagnosed with excess body weight of chronic liver diseases of the I degree, 16 of them with the II degree, and 14 of them with the III degree of excess body weight. Height, body weight, excess body weight and obesity index of chronic liver diseases, blood cholesterol, low-density lipoprotein (PZLP) and high-density lipoprotein (YuZLP), 3 different types of genes in the blood and their 7 different genotypes were determined and the results were analyzed.

THE RESULTS OBTAINED

Both genotypes of ADRB2 (rs1042713) A>G gene in overweight and obesity stage I of chronic liver disease were AA-50% and AG-50% in 19 patients (Table 1). 2 genotypes of ADRB3 (rs 4994) Trp 64 Arg gene were the most frequent genotypes, Trp / Trp in 55% of cases in 21 patients, and Trp/Arg in 17 patients in 45% of cases. 3 genotypes of PPARG2 (rs1801282) C34 G gene were found in 13 patients with C/G -35%, among the most frequent cases of this gene, C/C - 21 patients with 55%, and G/G genotype - 10% in 4 patients.

The frequency of genotypes in the 1rd degree of excess body weight of chronic liver diseases in %

Table 1.

| № | Gen | genotype | The number of encounters | | Avg. young | Male | | A woman | | Average height | Average body weight | TMI |
|---|----------------------------|----------|--------------------------|----|------------|------|------|---------|------|----------------|---------------------|-----|
| | | | | % | | | % | | % | | | |
| 1 | ADRB2 (rs1042713) A>G | A/A | 19 | 50 | 52.9 | 12 | 31.6 | 26 | 68.4 | 163.3 | 72.6 | 27 |
| | | A/G | 19 | 50 | 49 | 26 | 68.4 | 12 | 31.6 | 166.1 | 75.7 | 27 |
| 2 | ADRB3 (rs 4994) Trp 64 Arg | Trp/Trp | 21 | 55 | 49.3 | 6 | 15.8 | 15 | 84.2 | 165 | 74.3 | 27 |
| | | Trp/Arg | 17 | 45 | 60.3 | 11 | 84.2 | 6 | 15.8 | 163.7 | 73 | 27 |
| 3 | PPARG2 (rs1801282) C34 G | C/G | 13 | 35 | 50.4 | 10 | 26.3 | 3 | 7.9 | 168 | 76.8 | 27 |
| | | C/C | 21 | 55 | 47.7 | 5 | 13.1 | 16 | 42.1 | 163 | 72.7 | 27 |
| | | G/G | 4 | 10 | 43.5 | 2 | 5.3 | 2 | 5.3 | 162.5 | 72.5 | 27 |

II degree of overweight and obesity of chronic liver diseases (Table 2) ADRB2 (rs1042713)A>G gene was found in 6 patients with AA-37.5% in the first genotype and AG-62.5% in 10 patients with the second genotype. The first genotype of ADRB3 (rs 4994)_Trp 64 Arg gene was found in 12 patients with Trp/Trp- 75%, while the second genotype was found in 4 patients with Trp/Arg 25%. 3 genotypes of PPAR G2 (rs1801282)_C 34 G gene were found in 5 patients C/G in 31.3% cases, in 11 patients C/C- 68.7%, compared to 3 genotypes the third most frequent genotype G/G- was almost not found .

The frequency of genotypes in the 2nd degree of excess body weight of chronic liver diseases in %

Table 2.

| № | № | Gen | genotype | | The number of encounters | Avg. young | | Male | | A woman | Average height | Average body weight |
|---|----------------------------|---------|----------|------|--------------------------|------------|------|------|------|---------|----------------|---------------------|
| | | | | % | | | % | | % | | | |
| 1 | ADRB2 (rs1042713) A>G | A/A | 6 | 37.5 | 40 | 3 | 18.7 | 3 | 18.7 | 169.2 | 80.6 | 28 |
| | | A/G | 10 | 62.5 | 53.7 | 4 | 25 | 6 | 37.6 | 162.5 | 75.1 | 28 |
| 2 | ADRB3 (rs 4994) Trp 64 Arg | Trp/Trp | 12 | 75 | 47.3 | 5 | 31.3 | 7 | 43.7 | 165.6 | 77.6 | 28 |
| | | Trp/Arg | 4 | 25 | 31.5 | 1 | 6.3 | 3 | 18.7 | 168.1 | 78.9 | 28 |
| 3 | PPARG2 (rs1801282) C34 G | C/G | 5 | 31.3 | 50.8 | 3 | 18.7 | 2 | 12.6 | 171 | 82.5 | 28 |
| | | C/C | 11 | 68.7 | 47.5 | 7 | 43.7 | 4 | 25 | 164.6 | 76.8 | 28 |
| | | G/G | - | - | - | - | - | - | - | - | - | - |

In the 3rd degree of excess body weight of chronic liver diseases (Table 3), the first genotype of the ADRB2 (rs 1042713) A>G gene was AA-42.9% in 6 patients and AG - 57.1% in 8 patients with the second genotype. The first genotype of the ADRB3 (rs4994)_Trp64 Arg gene was the most common genotype, Trp/Trp-64.3% in 9 patients, and Trp/Arg-35.7% in 5 patients. 3 genotypes of PPARG2 (rs1801282)_C34 G gene were C/G-21.4% in 3 patients, the least detected of this gene, C/C- 78.6% in 11 patients, the most detected, the third genotype was G/G- was not determined at all.

The frequency of genotypes in the 3rd degree of excess body weight of chronic liver diseases in %

Table 3.

| № | № | Gen | genotype | | The number of encounters | Avg. young | | Male | | A woman | Average height | Average body weight |
|---|----------------------------|---------|----------|------|--------------------------|------------|------|------|------|---------|----------------|---------------------|
| | | | | % | | | % | | % | | | |
| 1 | ADRB2 (rs1042713) A>G | A/A | 6 | 42.9 | 46.6 | 3 | 21.4 | 3 | 21.4 | 166.7 | 88.4 | 29 |
| | | A/G | 8 | 57.1 | 47.7 | 2 | 14.3 | 4 | 28.6 | 172.5 | 84.8 | 29 |
| 2 | ADRB3 (rs 4994) Trp 64 Arg | Trp/Trp | 9 | 64.3 | 47.6 | 3 | 21.4 | 6 | 42.9 | 175.3 | 80.9 | 29 |
| | | Trp/Arg | 5 | 35.7 | 45 | 4 | 28.6 | 1 | 7.1 | 175.8 | 91 | 29 |
| 3 | PPARG2 (rs1801282) C34 G | C/G | 3 | 21.4 | 38.2 | 3 | 21.4 | 2 | 14.3 | 172.6 | 79.9 | 29 |
| | | C/C | 11 | 78.6 | 48 | 4 | 28.6 | 5 | 35.7 | 174.3 | 80.4 | 29 |
| | | G/G | - | - | - | - | - | - | - | - | - | - |

ADRB3(rs 4994)_Trp64 Arg, PPAR G2 (rs1801282)_C34 G genes in 2 genotypes of Trp/Trp-55%, C/C were most often detected in patients with chronic liver diseases with overweight and obesity index equal to 27, i.e. first-degree overweight patients. -55%, 2 genotypes of ADRB2 (rs 1042713) A>G gene were detected in both AA-50% and AG-50% cases. Among the 3 genotypes of the PPAR G2 (rs1801282)_C34 G gene, only the genotype was C/C-55% in most cases, and C/G-35%, G/G-10% in the other 2 genotypes.

Abu Ali ibn Sina's health care measures include physical training and nutritional measures depending on the client and the seasons, when the overweight and obesity index of chronic liver diseases is equal to 28, i.e. secondary ADRB2 (rs1042713)A>G, genotype AG-62,%, PPAR G2 (rs1801282)_C34 C/C-68.7% of G gene, and Trp/Trp- 75% genotype was the most frequent. Trp/ Arg -25% of the ADRB3(rs 4994)_Trp64 Arg gene was the least detected among these genes, and the third genotype of the PPARG2 (rs1801282)_C34 G gene, G/G-, was not found at all.

CONCLUSIONS

So, when overweight and obesity index of chronic liver diseases is equal to 29, that is, in the third level, C/ C genotype of PPARG2 (rs1801282)_C34 G gene - 78.6% was found in most cases.

The first genotype of PPAR G2 (rs1801282)_C34 G gene was C/G genotype in 21.4%, which was the least detected in this gene. C/C- 78.6%, the most frequent, the third genotype G/G- was not detected at all.

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