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INFLUENCE OF COMBINED HYPOLYPIDEMIC THERAPY ON ACHIEVING TARGETED LDL LEVELS IN PATIENTS WITH IBS AND TYPE 2 DIABETES

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Abstract

Relevance. Patients with coronary heart disease (CHD) and type 2 diabetes mellitus (DM2) belong to the category of very high cardiovascular risk. Despite the widespread use of statins, achieving target levels of low-density lipoprotein (LDL) remains insufficient.

Purpose of the study. To evaluate the effectiveness of combined hypolipidemic therapy compared to statin monotherapy in patients with coronary artery disease and type 2 diabetes.

Materials and methods. The prospective study included 120 patients with coronary heart disease and type 2 diabetes. The main group (n=60) received combined therapy (statin + ezetimib or PCSK9 inhibitor), while the control group (n=60) received monotherapy with statins. Evaluation was conducted after 12 weeks.

Results. In the main group, the decrease in LDL was 54%, and in the control group, it was 32% ($p<0.01$). Target LDL levels (<1.4 mmol/L) were achieved in 78% of patients in the main group compared to 42% in the control group ($p<0.001$).

Conclusion. Combined therapy significantly increases the effectiveness of dyslipidemia correction and the frequency of achieving target LDL levels in patients with coronary heart disease and type 2 diabetes.

Keywords: Coronary heart disease, type 2 diabetes mellitus, dyslipidemia, LDL, combined therapy

Introduction

The combination of coronary heart disease (CHD) and type 2 diabetes mellitus (DM2) is characterized by a high risk of cardiovascular complications and an unfavorable prognosis. In patients with type 2 diabetes, atherogenic dyslipidemia forms, including an increase in triglyceride levels, a decrease in high-density lipoprotein cholesterol, and an increase in the proportion of small dense low-density lipoprotein (LDL).

Despite the proven effectiveness of statins, a significant portion of patients do not reach the recommended target LDL levels. This is due to both the severity of metabolic disorders and the limitations of monotherapy. In this regard, the application of combined hypolipidemic strategies aimed at various links of lipid metabolism is relevant.

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Materials and Methods

The study included 120 patients (aged 45–75 years) with confirmed coronary heart disease and type 2 diabetes.

Eligibility criteria:

- presence of cardiovascular disease
- type 2 diabetes mellitus
- LDL level >1.8 mmol/L

Exclusion criteria:

- severe liver failure
- Stage 4–5 CBP
- cancer diseases

Research groups:

- Main group (n=60): statin + ezetimib / PCSK9 inhibitor
- Control group (n=60): monotherapy with statins

Evaluated indicators:

- LDL
- total cholesterol
- triglycerides
- achieving target levels

Observation period is 12 weeks.

Statistical processing was performed using Student's t-test. The differences were considered significant at $p<0.05$.

Results

Table 1. Lipid profile dynamics

Indicator	Before treatment	After treatment (main group)	After treatment (control)
LDL (mmol/L)	3,4 ± 0,6	1,56 ± 0,4	2,3 ± 0,5
Total cholesterol (mmol/L)	5,8 ± 0,7	3,9 ± 0,6	4,8 ± 0,6
Triglycerides (mmol/L)	2,1 ± 0,5	1,6 ± 0,4	1,9 ± 0,5

The decrease in LDL levels in the primary group was 54%, while in the control group it was 32% ($p<0.01$).

Achievement of target LDL levels

- Main group - 78% of patients
- Control group - 42% of patients
- $p < 0.001$

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Discussion

The results obtained demonstrate a significant advantage of combined hypolipidemic therapy compared to statin monotherapy in patients with coronary artery disease and type 2 diabetes. The more pronounced decrease in LDL levels in the main group is explained by the impact on various mechanisms of lipid metabolism.

Patients with diabetes mellitus maintain a high residual risk of cardiovascular events, requiring a more intensive reduction of lipids. Combined therapy not only achieves target LDL levels but also potentially improves clinical outcomes.

The obtained data align with the results of large-scale clinical trials, where it was shown that the addition of a second hypolipidemic drug significantly increases treatment efficacy.

Conclusion

Combined hypolipidemic therapy is a more effective strategy compared to monotherapy with statins in patients with coronary heart disease and type 2 diabetes. Its use significantly increases the frequency of achieving target LDL levels and improves lipid profile control.

Practical recommendations

1. Patients with coronary heart disease and type 2 diabetes require an aggressive reduction in LDL.
2. If the target levels are not achieved, early prescription of combined therapy is necessary.
3. Combined regimens should be considered a standard for treating patients with very high risk.
4. Lipid profile monitoring must be conducted regularly.

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