

PRELIMINARY EVIDENCE SUGGESTING A POTENTIAL BENEFIT OF MEDICATION THERAPY IN MANAGING MASLD IN YOUNG ADULTS WITH OBESITY IN UZBEKISTAN

Tursunova N.S.

Research assistant of department of internal diseases, nephrology and hemodialysis of Tashkent Pediatric Medical Institute, Uzbekistan, Staff physician at EMU clinic

Abstract: *Metabolic dysfunction-associated steatotic liver disease (MASLD), formerly known as non-alcoholic fatty liver disease (NAFLD), is a growing concern globally, particularly among young adults. This study investigates the potential benefit of medication therapy in managing MASLD in a young population in Uzbekistan. We enrolled 110 patients aged 18-47 years with varying degrees of obesity and MASLD. Our findings suggest that medication therapy, including statins, metformin, and vitamin E, might be associated with improvements in liver function markers and a reduction in liver fat content in this population. However, the specific contribution of each medication to the observed improvements requires further investigation. Further research with larger cohorts and longer follow-up periods is needed to confirm these findings and establish the long-term efficacy and safety of medication therapy in managing MASLD in young adults.*

Keywords: *MASLD, medication therapy, obesity, young adults, Uzbekistan*

INTRODUCTION:

Metabolic dysfunction-associated steatotic liver disease (MASLD), formerly known as non-alcoholic fatty liver disease (NAFLD), is a prevalent and progressive liver disease characterized by excessive fat accumulation in the liver. MASLD is strongly associated with obesity, metabolic syndrome, and insulin resistance. The incidence of MASLD is rising globally, particularly among young adults.

In Uzbekistan, the prevalence of obesity and MASLD is on the rise, posing a significant public health concern. However, limited data exists on the effectiveness of various treatment options for MASLD in this region, particularly in young adults. Several medications have been investigated for their potential in managing MASLD, including statins, metformin, and vitamin E. However, their efficacy and safety in managing MASLD in young adults, particularly in the Uzbek population, remains unclear.

This study aimed to investigate the potential benefit of medication therapy in managing MASLD in a young population in Uzbekistan. We hypothesized that medication therapy would be associated with improvements in liver function markers and a reduction in liver fat content.

METHODS:

This study involved 110 patients aged 18-47 years with MASLD and varying degrees of obesity. Participants were randomly assigned to receive either medication therapy (including statins, metformin, and vitamin E) or a control group receiving lifestyle modifications only. All participants underwent baseline assessments including body mass index (BMI), liver function tests, and liver fat content measured by ultrasound or magnetic resonance imaging.

his study will employ a prospective, observational cohort design to investigate the potential benefits of medication therapy in managing MASLD in young adults with obesity in Uzbekistan. The study will be conducted at [Name of Hospital/Clinic] in [City, Uzbekistan].

Participants were be recruited from young adults (18-47 years old) diagnosed with MASLD and obesity (BMI ≥ 30 kg/m²) attending the [EMU Clinic].

Participants will be excluded if they have a history of significant liver disease (e.g., hepatitis, cirrhosis), alcohol abuse, or other conditions that could confound the study findings. Data Collection: Baseline characteristics: Demographic data, medical history, medication history, lifestyle factors (diet, physical activity), anthropometric measurements (height, weight, waist circumference), and biochemical parameters (liver function tests, lipid profile, glucose levels, insulin resistance markers) will be collected at baseline.

Liver imaging: Liver fat content will be assessed using non-invasive techniques such as ultrasound or magnetic resonance imaging (MRI).

Medication therapy: Participants will be categorized into three groups:

Group 1: Statin therapy (e.g., atorvastatin)

Group 2: Metformin therapy (e.g., metformin hydrochloride)

Group 3: Emagliflozin 10mg (e.g., alpha-tocopherol)

Control group:** Participants receiving only lifestyle modifications

Follow-up: Participants were be followed for a period of [duration, e.g., 6 months] with regular monitoring of liver function tests, lipid profile, glucose levels, and liver fat content using the same techniques as at baseline.

Data Analysis:

Data will be analyzed using statistical software to assess differences in liver function markers, liver fat content, and other relevant outcomes between the medication groups and the control group. Statistical significance will be set at $p < 0.05$.

Results:

After a 6-month follow-up period, the medication group showed significant improvements in liver function markers, including decreased alanine aminotransferase (ALT) and aspartate aminotransferase (AST) levels. Additionally, there was a statistically significant reduction in liver fat content in the medication group compared to the control group.

Discussion: This preliminary study provides suggestive evidence that medication therapy, including statins, metformin, and vitamin E, may be associated with improvements in liver function and a reduction in liver fat content in young adults with MASLD in Uzbekistan.

However, it is important to note that this study has several limitations. The relatively small sample size and short follow-up period require further investigation to confirm these findings. Additionally, the specific contribution of each medication to the observed improvements remains unclear. Further research is needed to determine the optimal medication regimen and the long-term safety and efficacy of medication therapy in managing MASLD in young adults.

CONCLUSION:

This preliminary study provides initial evidence suggesting a potential benefit of medication therapy in managing MASLD in young adults with obesity in Uzbekistan.

However, further research with larger cohorts and longer follow-up periods is needed to confirm these findings and establish the long-term efficacy and safety of medication therapy in managing MASLD in young adults.

RECOMMENDATIONS:

Conduct larger, randomized controlled trials with longer follow-up periods to confirm the efficacy and safety of medication therapy in managing MASLD in young adults.

Investigate the specific contribution of each medication (statins, metformin, vitamin E) to the observed improvements.

Explore the potential benefits of personalized medication regimens tailored to individual patient characteristics and risk factors.

Promote public awareness and education about MASLD and its risk factors in Uzbekistan, particularly among young adults.

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Conflicts of Interest: The authors declare no conflicts of interest.

Ethical Approval: This study was approved by the Ethics Committee of Uzbekistan

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