Kharkiv National
Medical University

INTERNATIONAL SCIENTIFIC INTERDISCIPLINARY CONFERENCE

of Young Scientists and Medical Students

ISIC

25-27 May 2026

Kharkiv, Ukraine

Where knowledge heals and transforms

Kharkiv National
Medical University

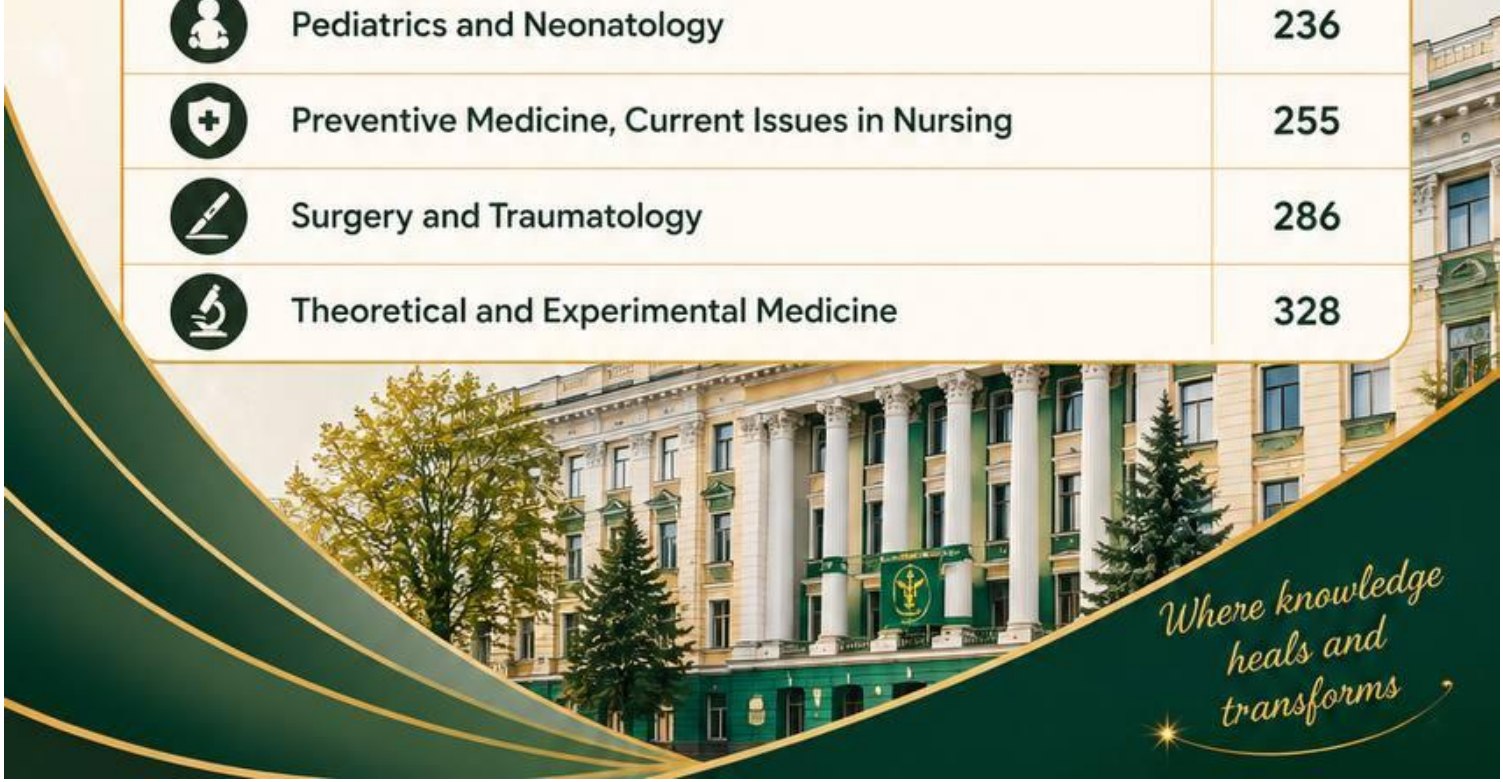
INTERNATIONAL SCIENTIFIC INTERDISCIPLINARY CONFERENCE

of Young Scientists and Medical Students

ISIC

25-27 May 2026

Kharkiv, Ukraine



ISIC

INTERNATIONAL SCIENTIFIC
INTERDISCIPLINARY CONFERENCE

THEORETICAL AND EXPERIMENTAL MEDICINE

ADVANCING KNOWLEDGE.
INSPIRING INNOVATION. IMPROVING LIVES.

May 25–27, 2026

Where knowledge heals and transforms

Onopriienko Danylo

COMPARATIVE ANALYSIS OF THE EVIDENCE BASE FOR INCLISIRAN, MONOCLONAL ANTIBODIES (ALIROCUMAB, EVOLOCUMAB), AND BEMPEDOIC ACID

Kharkiv, Ukraine

Kharkiv National Medical University

Department of Pharmacology and Medical Prescription

Scientific advisor : MD, prof. Dunaieva Inna, Assistant Doroshenko Oksana

Metabolic syndrome, atherosclerosis, and dyslipoproteinemia remain important contributors to cardiovascular (CV) risk and are closely associated with elevated low-density lipoprotein cholesterol (LDL-C). Therefore, it is important to define the role of modern lipid-lowering agents in achieving target LDL-C levels and preventing CV complications. Inclisiran is a small interfering RNA (siRNA) that suppresses PCSK9 synthesis; alirocumab and evolocumab are monoclonal antibodies (mAbs) against PCSK9; bempedoic acid is an oral non-statin adenosine triphosphate-citrate lyase inhibitor. Their evaluation is based on LDL-C-lowering efficacy, safety profile, and dosing features.

The aim was to conduct a comparative analysis of the evidence base for inclisiran, mAbs against PCSK9, and bempedoic acid, including their efficacy, safety, and place in modern lipid-lowering therapy. According to meta-analyses, mAbs demonstrate greater peak LDL-C reductions (59–61%) than inclisiran (50–52%), and evidence from the FOURIER and ODYSSEY OUTCOMES trials indicates about a 15% reduction in the risk of major CV events. Bempedoic acid provides a more moderate reduction in LDL-C; however, its clinical significance was confirmed in the CLEAR Outcomes trial, which demonstrated reduced risk of major CV events in statin-intolerant patients.

Inclisiran demonstrated high efficacy in achieving target LDL-C levels: LDL-C <1.4 mmol/L was achieved in 84.9% of patients, compared with 31% in the usual therapy group ($p < 0.0001$). Inclisiran monotherapy provided a sustained 50.6% reduction in LDLC. After the initial treatment stage, inclisiran is administered twice yearly, which may improve adherence and facilitate treatment monitoring. A pooled phase III ORION analysis indicated a potential 26% reduction in the risk of CV events and preservation of lipidlowering effects for more than 3 years, without

signs of reduced efficacy. The frequency of local reactions with inclisiran is higher (8.2% versus 2–3% with mAbs), although they are transient. For bempedoic acid, elevated uric acid levels, gout, and tendinopathies should be considered.

Monoclonal antibodies against PCSK9 (evolocumab, alirocumab) have the most mature evidence base for reducing major CV events and achieving pronounced LDLC lowering. Inclisiran is regarded as a promising option for long-term dyslipidemia control due to its sustained lipid-lowering effect and twice-yearly administration. Bempedoic acid is an oral non-statin therapy with a moderate lipidlowering effect. According to current ESC/EAS recommendations, monoclonal antibodies against PCSK9 and bempedoic acid are non-statin approaches with proven effects on CV outcomes, whereas inclisiran is regarded as an effective agent for long-term LDL-C control. Therefore, therapy should be selected individually based on the required intensity of LDL-C reduction, evidence regarding CV outcomes, treatment adherence, and safety profile.