PERSONALIZED APPROACHES IN PERIOPERATIVE MEDICINE: INTERNATIONAL EVOLUTION AND THE GEORGIAN EXPERIENCE

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Background. Perioperative medicine is emerging globally as a multidisciplinary field integrating anaesthesia, intensive care, and internal medicine to optimise patient outcomes. International frameworks, particularly in the United Kingdom, Australia, and New Zealand, have emphasized personalised strategies, including risk stratification, multimodal prehabilitation, pharmacogenomics, and patient-centred engagement [1–3]. In Georgia, these principles have been recently introduced into both clinical practice and medical education.

Aim. To compare perioperative outcomes before and after the structured implementation of personalised medicine strategies in the Georgian liver transplantation program.

Methods. A retrospective cross-sectional study was conducted using medical records of 103 living donor liver transplantation (LDLT) recipients between December 2014 and July 2024. Two periods were analysed: 2015–2018 (pre-personalised medicine) and 2019–2024 (post-implementation). Data included demographics, MELD score, perioperative parameters, postoperative complications, and survival outcomes.

Results. Implementation of personalised perioperative medicine—including tailored nutritional support, structured risk stratification, and enhanced infection control—was associated with measurable improvements in perioperative and post-discharge outcomes. Patients in the post-implementation cohort demonstrated higher survival rates and lower complication burdens compared with the pre-implementation group [4–6]. These findings highlight the translational value of integrating international personalised medicine frameworks into Georgian clinical practice [7–9].

Conclusion. Perioperative medicine is transitioning from standardised to personalised, data-driven care. Georgia's unique contribution lies in pioneering perioperative medicine within its medical curriculum and applying these approaches in liver transplantation. The alignment of international evidence with local practice underscores the transformative potential of personalised perioperative medicine for improving patient outcomes in Georgia.

References

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