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Bridging Clinical Innovation and Evidence-Based Practice in Pakistan: From Maternal Cardiology to Critical Care and Digital Rehabilitation

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The Pakistan Journal of Clinical Research is committed to advancing clinically relevant and methodologically rigorous research that addresses contemporary healthcare challenges in Pakistan and beyond. The studies featured in this issue collectively reflect the growing diversity of clinical investigation within our region, encompassing maternal cardiovascular health, surgical risk prediction, nutritional therapeutics, critical care ultrasonography, and digital rehabilitation sciences. Together, they emphasize a common objective: improving patient outcomes through timely diagnosis, risk stratification, multidisciplinary care, and innovative therapeutic approaches.

Peripartum cardiomyopathy (PPCM) remains one of the most devastating yet underrecognized causes of maternal morbidity and mortality worldwide. In low- and middle-income countries, delayed diagnosis, limited access to specialized cardiac services, and socioeconomic barriers continue to adversely influence outcomes. The prospective cohort study conducted at Lady Reading Hospital, Peshawar, provides important local evidence regarding maternal-fetal outcomes among Pakistani women diagnosed with PPCM. Despite favorable fetal outcomes in most cases, maternal cardiac complications remained alarmingly common, underscoring the significant clinical burden associated with this condition. The identification of reduced baseline left ventricular ejection fraction and anemia as predictors of adverse maternal outcomes carries important implications for routine obstetric and cardiology practice. Early echocardiographic assessment, vigilant antenatal surveillance, correction of modifiable risk factors such as anemia, and multidisciplinary management involving obstetricians, cardiologists, and intensivists may substantially improve maternal outcomes. This work contributes valuable prospective data from Pakistan, where regional evidence on PPCM remains limited.

Risk prediction models continue to transform perioperative decision-making by enabling clinicians to identify vulnerable patients before complications develop. The prospective cohort study evaluating the Emergency Surgery Score (ESS) as a predictor of surgical site infections following emergency gastrointestinal surgery expands the utility of an already established mortality prediction tool. The findings demonstrate that higher ESS values are independently associated with postoperative infectious complications, thereby providing clinicians with a practical method for targeted infection prevention strategies. In resource-constrained healthcare settings, accurate preoperative risk stratification may facilitate more efficient allocation of intensive postoperative monitoring, antimicrobial stewardship interventions, and surgical planning. Importantly, this study reinforces the growing role of predictive analytics in modern surgical practice.

Nutritional interventions increasingly occupy an important position within cardiovascular medicine. The randomized controlled trial investigating selenium-enriched tuna nuggets among patients with ischemic cardiomyopathy illustrates how functional foods may complement conventional therapeutic approaches. Significant improvements across anthropometric measures, lipid profiles, fasting glucose, and inflammatory biomarkers highlight the potential role of dietary interventions in managing chronic cardiovascular disease. The concept of leveraging nutrient-enriched, culturally acceptable, and affordable food products offers considerable promise for populations disproportionately affected by cardiometabolic disorders. Such translational research bridges clinical nutrition and cardiovascular therapeutics while emphasizing patient-centered and sustainable healthcare solutions.

Critical care medicine similarly benefits from innovations that prioritize safety, accessibility, and cost-effectiveness. The cross-sectional study evaluating ultrasonographic inferior vena cava diameter and collapsibility index as noninvasive predictors of central venous pressure

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contributes meaningful evidence supporting point-of-care ultrasonography in critically ill patients. The strong correlations observed between ultrasonographic parameters and invasive hemodynamic measurements reinforce the growing movement toward minimally invasive bedside diagnostics. For healthcare institutions facing limitations in invasive monitoring resources, ultrasound-guided assessment provides an attractive alternative that enhances patient safety while preserving diagnostic accuracy. Wider implementation of such approaches will require continued investment in clinician training and standardized protocols across intensive care settings.

Digital health technologies continue to redefine healthcare delivery worldwide. The scoping review examining telerehabilitation for amyotrophic lateral sclerosis highlights the considerable potential of telemedicine-based rehabilitation services for patients experiencing progressive neurological disability. High adherence rates, preservation of functional outcomes, and favorable patient satisfaction collectively support the feasibility of remote rehabilitation interventions. In countries where geographical barriers and workforce limitations frequently restrict access to specialized rehabilitation services, telerehabilitation may offer meaningful improvements in healthcare equity and continuity of care. Future investigations evaluating long-term outcomes, cost-effectiveness, and implementation frameworks will further inform its integration into routine clinical practice.

Collectively, the contributions presented in this issue reflect an important evolution in clinical research priorities. They emphasize not only therapeutic innovation but also preventive strategies, individualized risk assessment, multidisciplinary collaboration, and technological advancement. Importantly, these studies address healthcare questions that are directly relevant to regional clinical practice while maintaining broader international significance.

The Pakistan Journal of Clinical Research remains committed to providing a platform for high-quality scholarly work that informs evidence-based medicine and promotes meaningful improvements in patient care. We extend our appreciation to the authors, reviewers, and editorial contributors whose dedication continues to strengthen the scientific dialogue within our medical community. It is our hope that the findings presented in this issue will stimulate further collaborative research and contribute to improved health outcomes across diverse patient populations.