Streszczenie w języku angielskim

Acute-on-chronic liver failure – selected clinical aspects

Introduction

Acute-on-chronic liver failure (ACLF) is a complex and rapidly progressing clinical syndrome that develops in patients with pre-existing chronic liver disease. It is characterized by sudden hepatic decompensation, frequently triggered by events such as infections, gastrointestinal bleeding, or alcohol-related hepatitis, and leads to multiorgan failure and high short-term mortality. Although liver transplantation remains the only curative treatment for ACLF, a large proportion of patients – particularly those with alcohol-related etiology – are excluded from transplantation due to ongoing addiction, psychosocial contraindications, or rapid clinical deterioration. This necessitates the exploration of supportive therapeutic options and the identification of reliable prognostic markers.

Aims

This doctoral thesis aims to evaluate two complementary aspects of ACLF management: the efficacy of single-pass albumin dialysis (SPAD) as a bridging or supportive therapy, and the prognostic relevance of thyroid hormone alterations in patients undergoing medical or transplant-based treatment.

Manuscript #1

Kośnik A, Gadomski J, Walczak-Wieteska P, Andruszkiewicz P, Raszeja-Wyszomirska J. Role of single-pass albumin dialysis in acute-on-chronic liver failure of alcoholic origin: a single-center experience. Polish Archives of Internal Medicine. 2024 Oct 30;134(10):16869. DOI: 10.20452/pamw.16869.

The first publication, titled *"Role of single-pass albumin dialysis in acute-on-chronic liver failure of alcoholic origin: a single-center experience"*, retrospectively analyzed 20 patients with alcohol-related ACLF. All patients underwent SPAD using a standardized protocol with three dialysis sessions, a 4% albumin-enriched dialysate, and the multiFiltratePRO device. Biochemical parameters before and after therapy were evaluated, including bilirubin, creatinine, MELD, MELD-Na, and CLIF-C ACLF scores. SPAD significantly improved laboratory values and MELD-related scores but had no effect on CLIF-C ACLF. The overall in-hospital mortality rate was 85%. Importantly, 30-day survival was significantly higher in patients with MELD <30 (57%) compared to those with MELD ≥30

(8%), supporting the possible role of SPAD as a bridging therapy in selected patients excluded from liver transplantation.

Manuscript #2

Kośnik A, Kurpiewska D, Janik M, Raszeja-Wyszomirska J. Thyroid hormones alterations in acute-on-chronic liver failure: a focus on liver transplantation and survival outcomes. Polish Archives of Internal Medicine. 2025 Apr 24;135(4):16989. DOI: 10.20452/pamw.16989.

The second publication, *"Thyroid hormones alterations in acute-on-chronic liver failure: a focus on liver transplantation and survival outcomes"*, included 95 ACLF patients, 43 of whom underwent liver transplantation, while 52 received standard medical care. All participants had their serum fT3, fT4, and TSH levels measured. The analysis revealed that fT3 and fT4 levels were significantly lower in patients who died, regardless of treatment approach. fT3 proved to be an independent prognostic factor in both transplanted and non-transplanted groups, while TSH did not show predictive value. These findings point to the clinical utility of thyroid hormone profiles – especially fT3 – in outcome prediction and treatment planning.

Conclusions

The two publications collectively emphasize a comprehensive and multidisciplinary approach to managing ACLF. SPAD, while not universally curative, may improve clinical parameters and offer a supportive option in patients with moderate disease severity and no transplant eligibility. Simultaneously, thyroid hormone assessments – particularly fT3 levels – can serve as simple, cost-effective prognostic tools that enhance risk stratification and treatment decision-making. The thesis provides a foundation for future prospective research aimed at standardizing hormonal monitoring and evaluating the long-term impact of SPAD, ultimately contributing to individualized care strategies for this high-risk population.