



Introduction

- Insulin therapy (IT) and plasmapheresis are used to treat hypertriglyceridemia-associated pancreatitis (HTAP).
- However, the optimal treatment modality for lowering the triglyceride level in patients with HTAP remains unclear.
- Therefore, we evaluated the efficacy and safety of IT and plasmapheresis in managing HTAP.

Results

- Six studies (1 randomized controlled trial [RCT] and 5 cohort studies) with 302 patients with HTAP (167 on IT vs. 135 on plasmapheresis) were included.
- Plasmapheresis was more effective than IT in reduction of triglycerides within 24-hours (SMD -0.57; 95% CI -1.02, -0.13; P=0.01, I²=56.8%, Figure 1A).
- However, LOS (MD -1.96; 95% CI -4.45, 0.54; P=0.12; I²=0%, Figure 1B), mortality (RR 0.68, 95% CI 0.28-1.64, P=0.39, I²=0%, Figure 1C), ARF (RR 0.44, 95% CI 0.06-3.05, P=0.41, I²=84%), hypotension (RR 0.63, 95% CI 0.16-2.52, P=0.51, I²=79%), and need for IMV (RR 0.52, 95% CI 0.12-12.35, P=0.40, I²=80%) were similar between two groups.
- The treatment-related AEs were significantly lower in IT than plasmapheresis (RR 0.14, 95% CI 0.04-0.51, P=0.003, I²=0%, Figure 1D).

Methods

- We performed a comprehensive literature search using PubMed, Embase, and Web of Science databases through May 30, 2022, for all studies that compared IT vs. plasmapheresis in patients with HTAP.
- The primary outcomes were effectiveness (reduction in triglycerides within 24-hours of admission) and clinical outcomes, including hospital length-of-stay (LOS), mortality, acute renal failure (ARF), hypotension, and need for invasive mechanical ventilation (IMV).
- The secondary outcome was the overall treatment-related adverse events (AEs).
- Random-effects meta-analysis was conducted, and risk ratio (RR) and mean difference (MD) or standardized mean difference (SMD) for proportional and continuous variables were computed, respectively.

Conclusions

- Our meta-analysis demonstrated that despite the greater reduction of triglycerides with plasmapheresis compared to insulin therapy, the clinical outcomes, including LOS, mortality, ARF, hypotension, and need for IMV, were comparable with lower treatment-related adverse events with insulin therapy.
- Future large-scale RCTs are necessary to validate our findings.