

Insights from a large cohort of critically ill patients with Idiopathic Systemic Capillary Leak Syndrome



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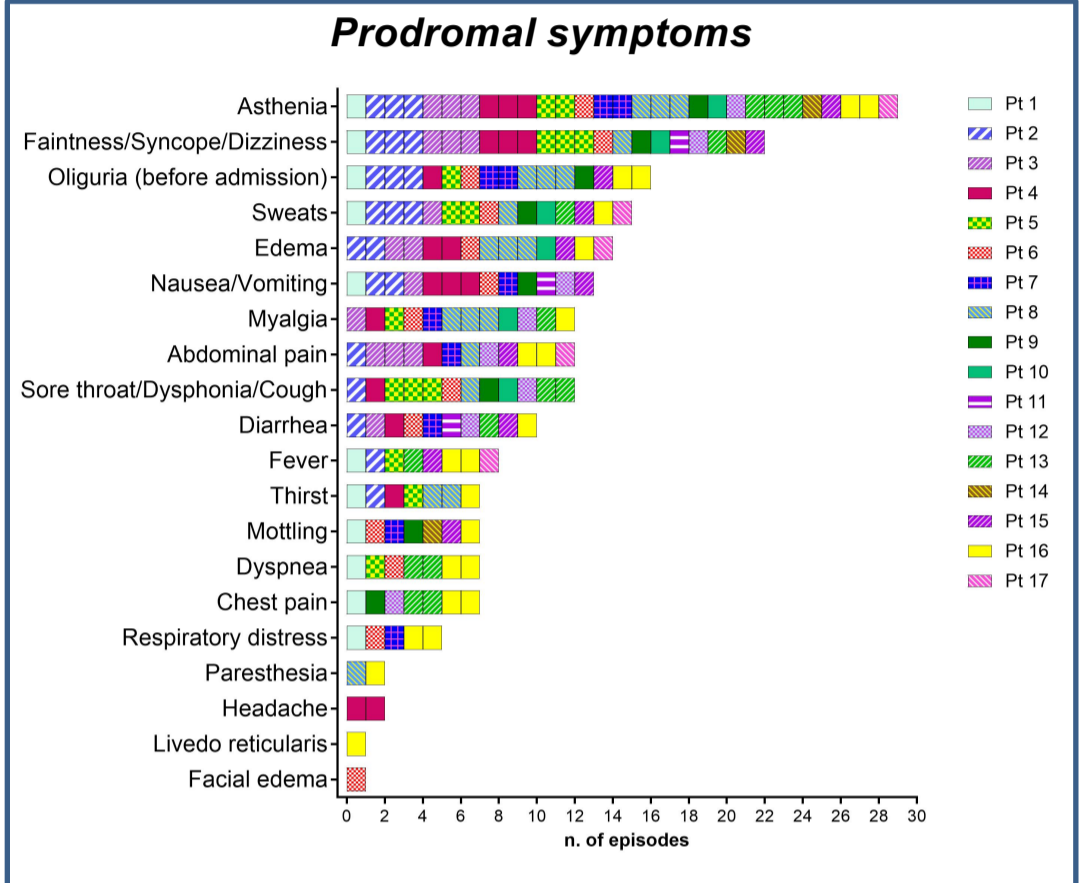
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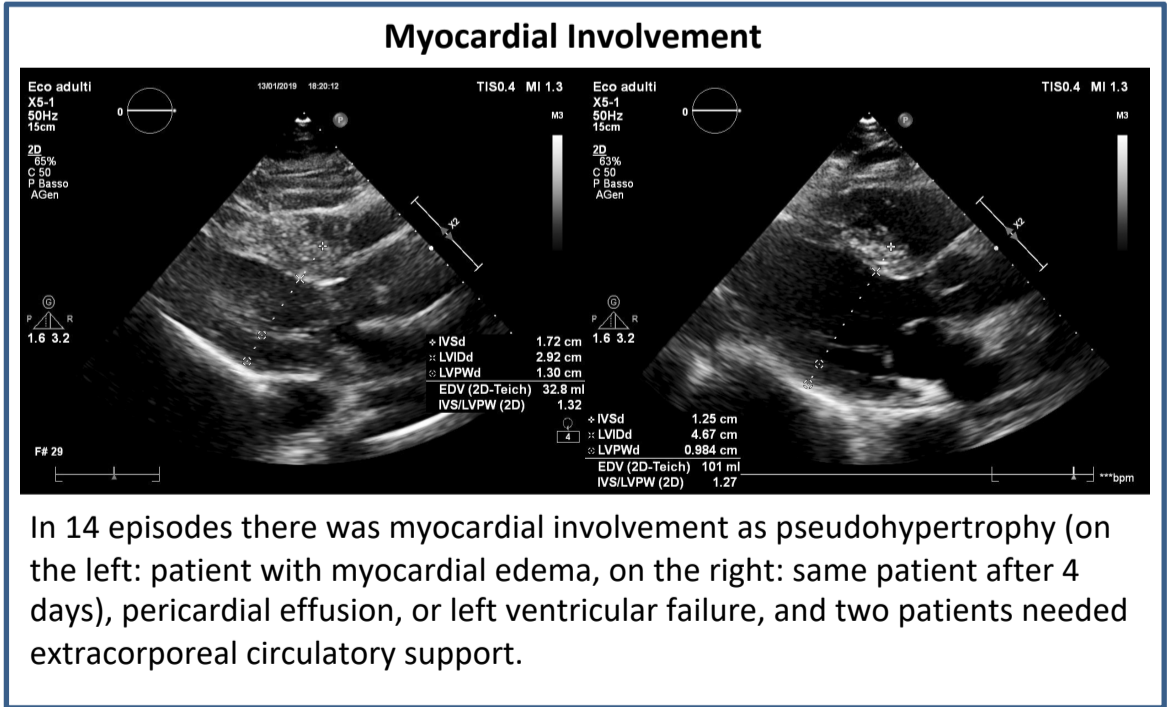
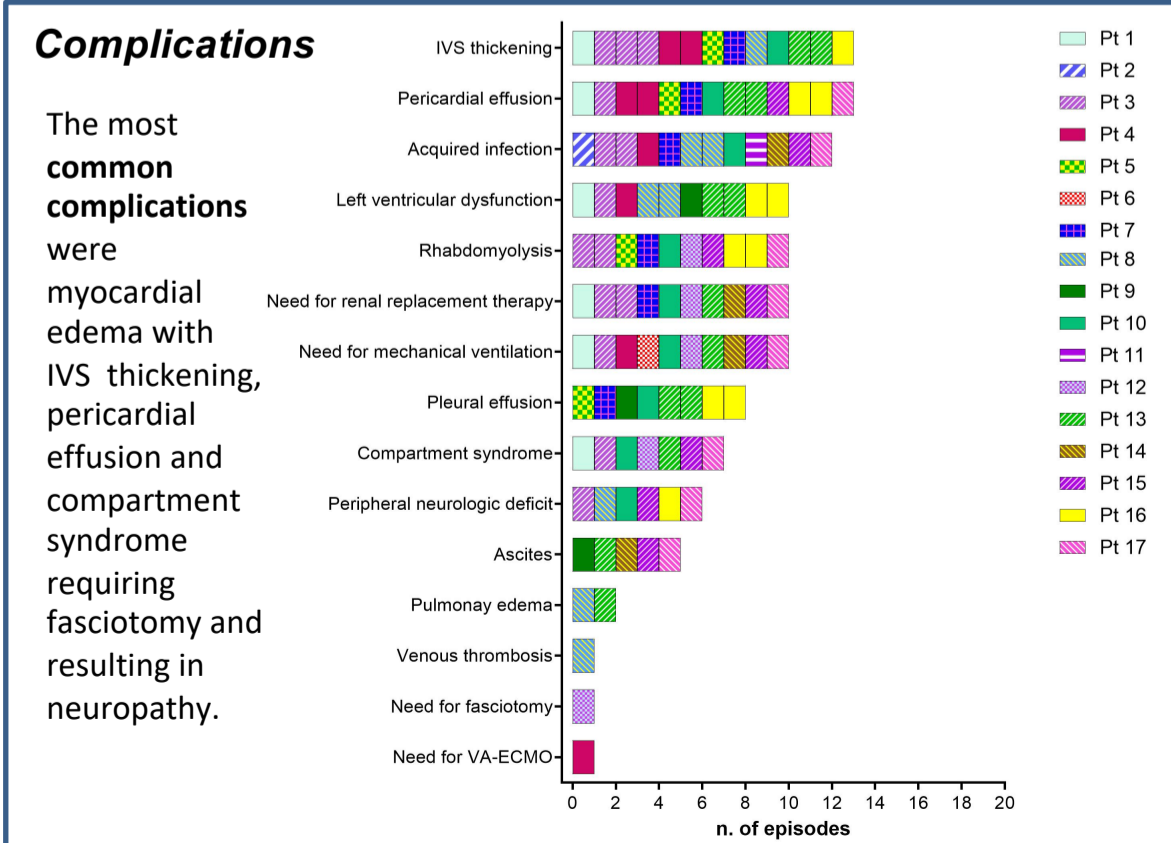
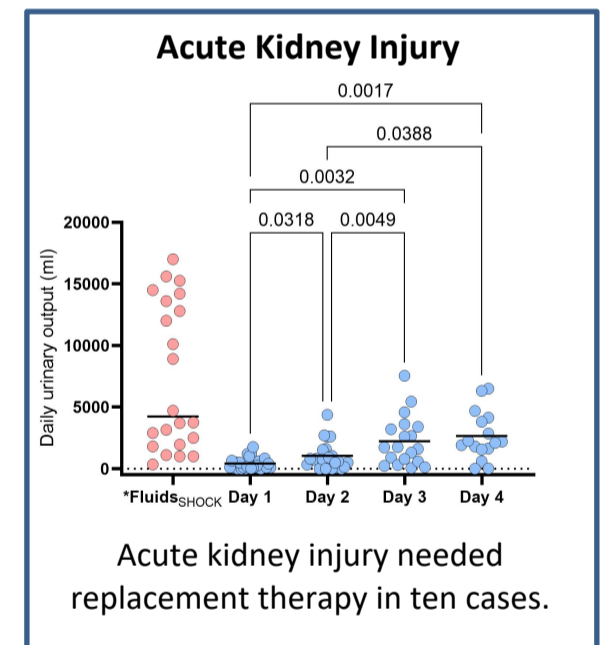
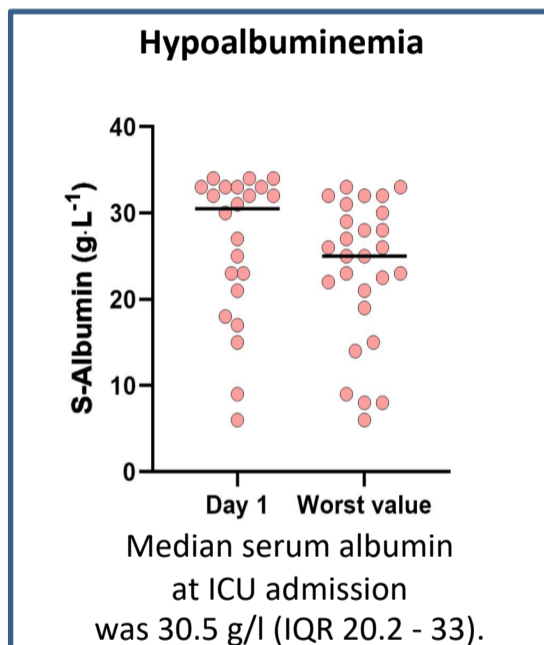
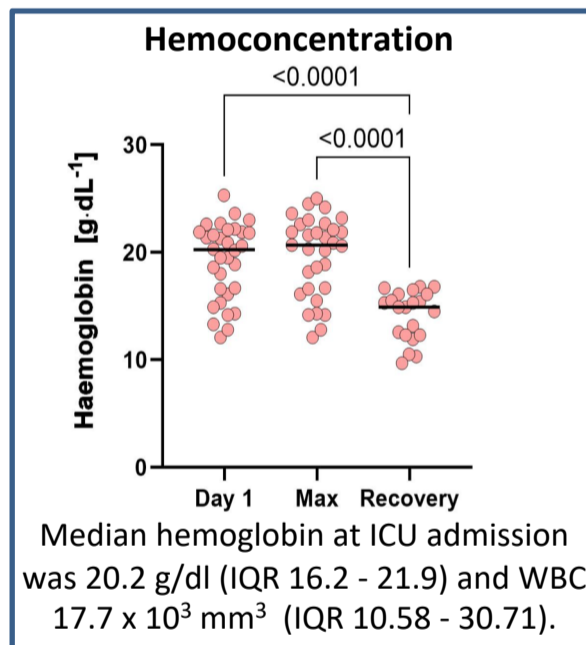
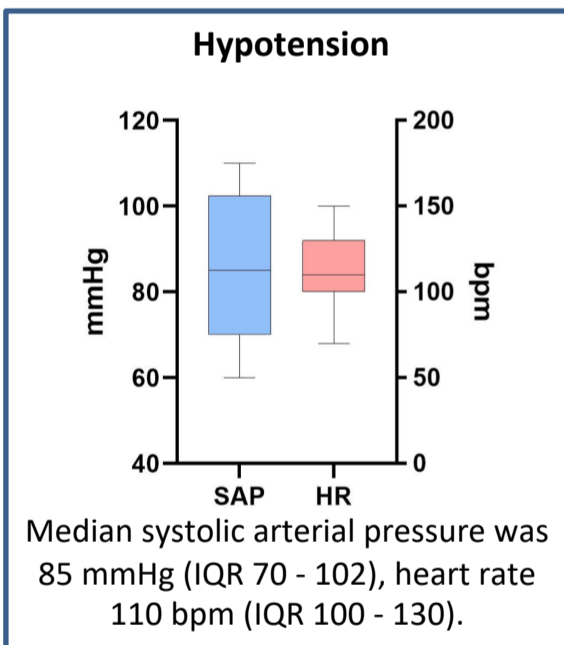
Background: Idiopathic systemic capillary leak syndrome (ISCLS), also known as **Clarkson's disease**, is a rare life-threatening condition characterized by **recurrent shock episodes** due to an abrupt onset of **plasma shift from the intra to the extravascular compartment**. The underlying pathophysiological mechanism is not fully understood, but it is characterized by a sudden increase of endothelial barrier permeability due to loosening adherens junctions. Therefore, ISCLS belongs to the nosological category of Paroxysmal Permeability Disorders (PPDs). Despite similarities to other shock states, ISCLS **requires distinct management strategies**. This study aims to elucidate the clinical presentation, course, and management of critically ill ISCLS patients in Italy.

Methods: Case series collected at the Luigi Sacco Hospital in Milan, a referral center for ISCLS, from **January 2014 to February 2024**. Two researchers independently reviewed all clinical records of patients with a diagnosis of ISCLS who were admitted to ICU. Thereafter, the description of each episode was collegially discussed by the authors who filled the records in a specifically designed electronic database. Differences between time-points were assessed with the one-way analysis of variance (ANOVA), followed by post hoc Tukey test. A $p < 0.05$ was considered statistically significant for two-tail tests.

Results: Data from **17 patients** (50% female) with **34 episodes** were collected in the study period. The median age at diagnosis was 55.5 years (IQR 43.2-64). In 19 episodes, the crises were triggered by an upper respiratory infection, of which six were due to SARS-CoV-2 infection. The median ICU stay was 7 days (IQR 3-10.5). Five patients died, all of them during episodes triggered by SARS-CoV-2.



At ICU admission:



Treatment: Careful sparing of fluid supply in shock phase is the correct strategy to prevent overload complications.

Conclusion: Our study provides a detailed description of the unique features of the shock due to ISCLS, which is frequently misdiagnosed and whose timely recognition is crucial for appropriate management. Our data highlight the detrimental impact of infection by SARS-CoV-2 on patient outcomes.