



Indications and techniques applied to perform extracorporeal therapies in companion animals: a retrospective study in a teaching hospital

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Background

Extracorporeal therapies (ECT) are indicated for blood purification in endogenous substances accumulation (ESA) such as acute kidney disease (AKD), immune-mediated diseases (IMD) or severe intoxications applying either hemodialysis (HD), hemoperfusion (HP), or membrane-based therapeutic plasma exchange (mTPE). Studies describing ECT indications, complications, and outcomes based on the underlying cause are limited. This study has been conducted at a Veterinary Teaching Hospital, one year after the implementation of its ECT program.



Fig.1 - Picture of a dog undergoing hemodialysis

Objectives

To describe signalment, indications, applied ECT, complications and patient outcome.

Methods

Medical records of patients treated with ECT from November 18th, 2023 to December 31st, 2024 were retrospectively reviewed. Survival was analyzed using Fisher's and Kruskal-Wallis tests. A generalized linear mixed model assessed complications by applied ECT.

Results

Forty-one animals underwent 103 ECT sessions (37 dogs, 4 cats).

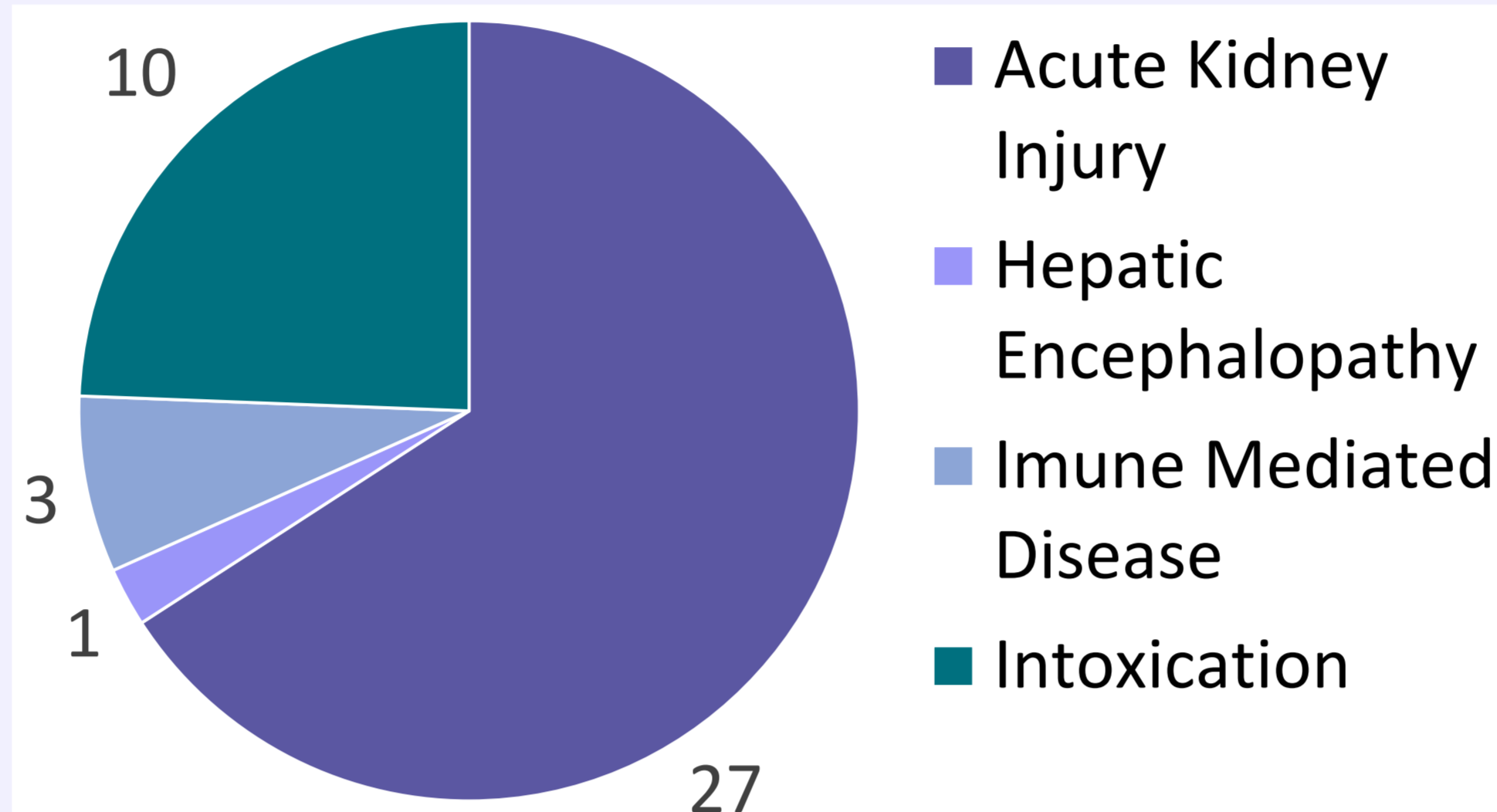


Fig.2 - Disease categories of ECT patients

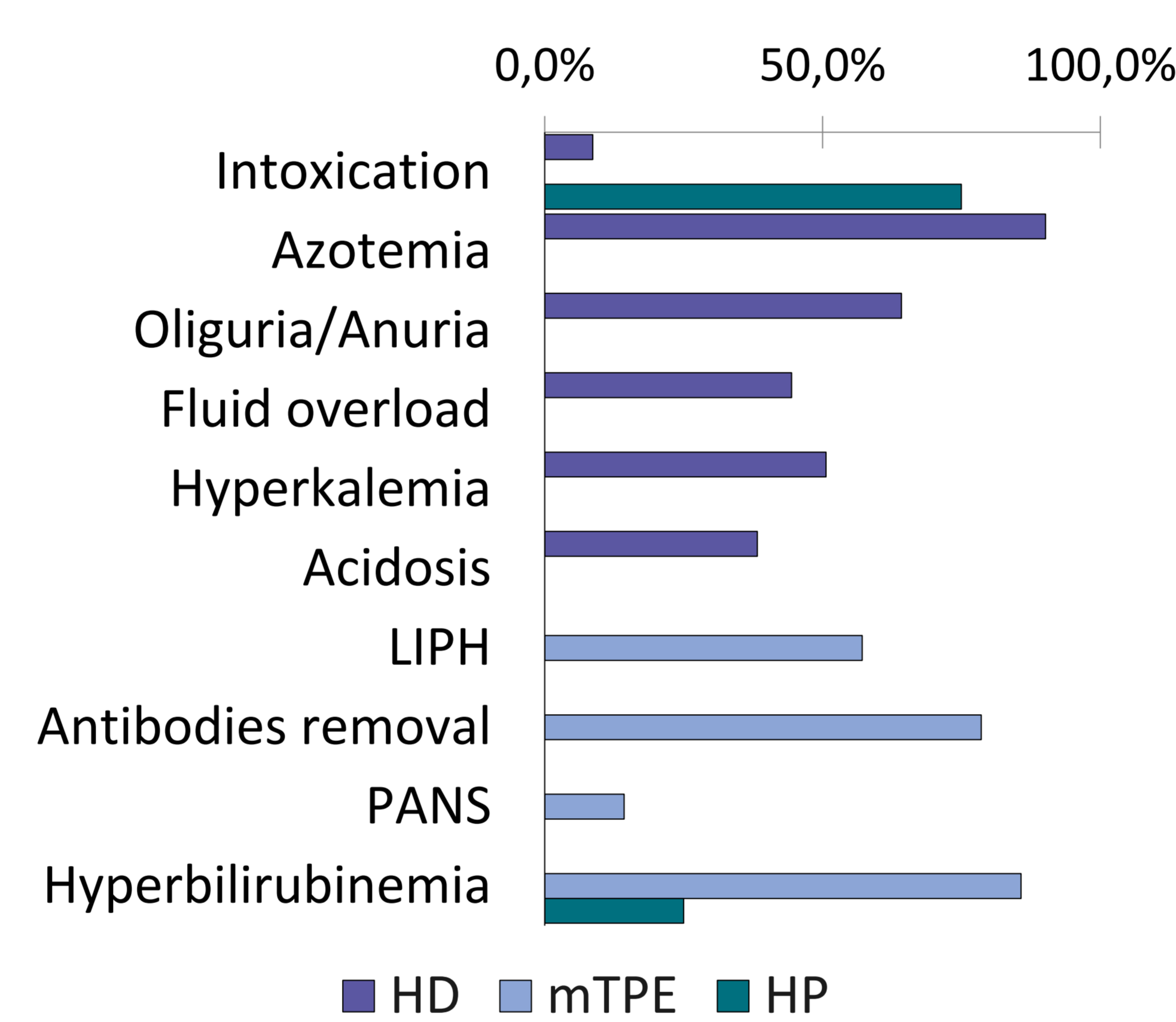


Fig.3 - Indications for ECT sessions initiation (LIHP: Leptospirosis-induced pulmonary hemorrhage PANS/ Post Attenuation Neurological Signs)

Complication rate was not significantly different regarding applied ECT (Fig.4) or urgency of treatment.

Sample size did not allow to assess whether a specific complication was associated with the applied ECT. None of the complications was associated with case fatality.

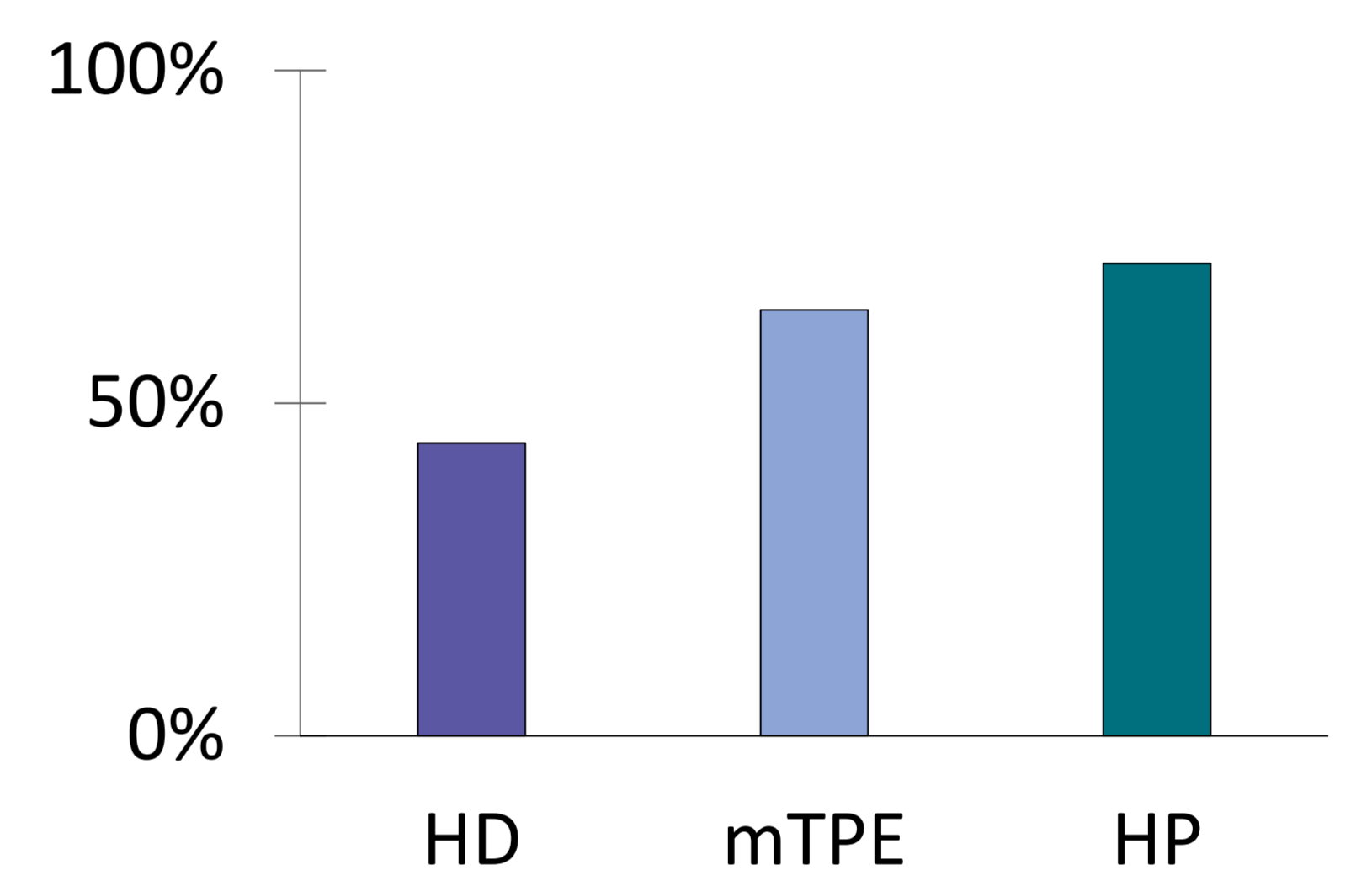


Fig.4 - Complication rates across ECT modalities

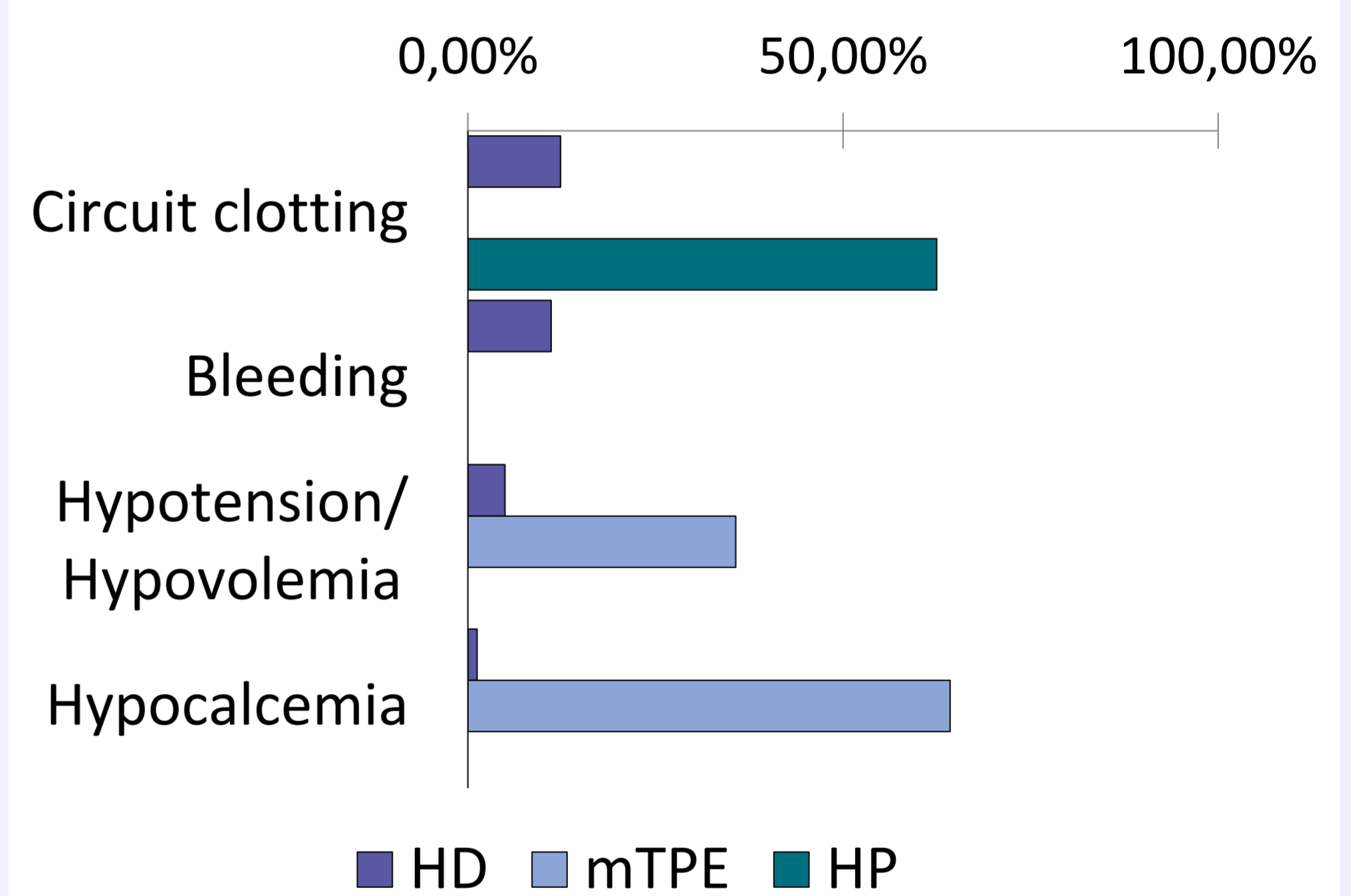


Fig.5 - Distribution of complications by ECT modality

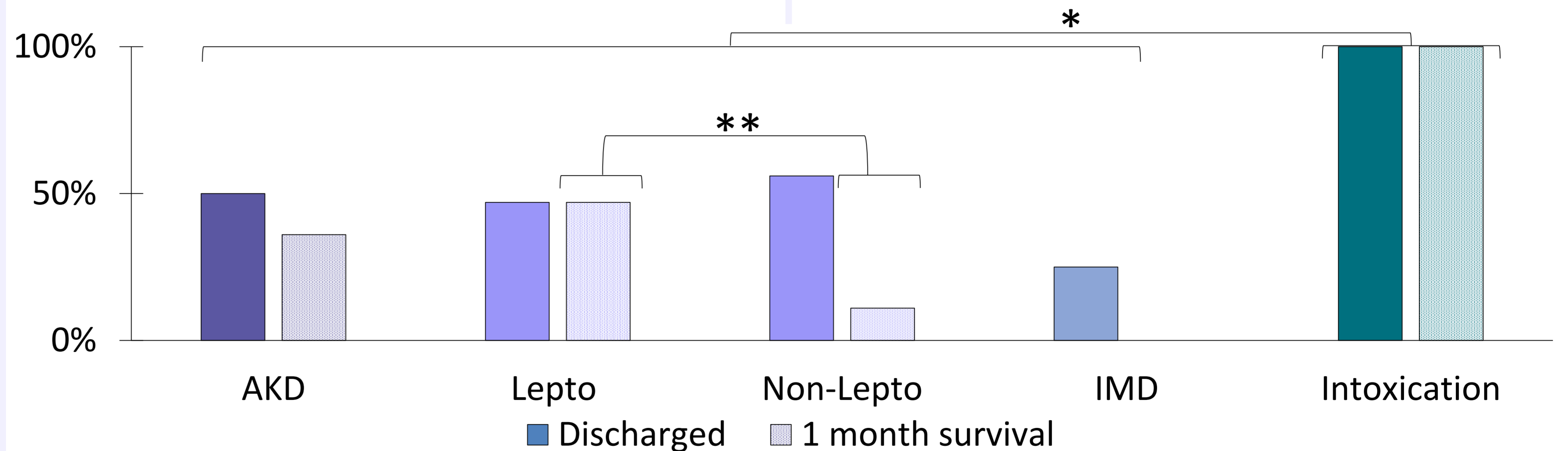


Fig.6 - Outcomes by indication groups and subgroups

Conclusion

Complication rate associated with ECT was high regardless of the technique but not associated with case fatality. Animals undergoing ECT for intoxication had an excellent outcome. Patients with AKD and confirmed leptospirosis had a significantly better one-month survival compared with AKD patients without evidence of leptospirosis.

