Title: Vasodilation as a Key Feature of Microcirculatory Dysfunction in Sepsis Survivors

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Objective: To assess the impact of sepsis on renal and hepatic microhemodynamics in survivors.
Method: Wistar rats underwent sepsis induction and were monitored for up to 1 year and 6 months regarding renal and hepatic microhemodynamics. Naive animals aged 3 months and 6 months served as the control group (n=3/period). Sepsis was induced by bacterial inoculation (2mL of E.coli 10^8 CFU/mL) into the jugular vein and monitored in the acute phase (6 hours) and post-sepsis (3 months, 6 months, 1 year and 3 months, and 1 year and 6 months) (n=3/period). Sidestream Darkfield Imaging (SDF) captured three images of different organ parts.
Results: Aging did not alter the microcirculation pattern in naive animals regarding density, microvessel diameter, and blood flow velocity. During post-sepsis, vasodilation of microvessels of all diameters persisted until the chronic phase in the liver and kidney. Only in the liver, the smallest caliber microvessels gradually returned to baseline levels from 6 months post-sepsis. However, blood flow velocity/diameter in microvessels remained unchanged throughout all periods of sepsis and post-sepsis in both organs.
Conclusion: Sepsis induced persistent vasodilation in survivors, suggesting a permanent phenomenon. Further investigation is needed to understand the impact of this dysfunction on morbidity and mortality in sepsis survivors.