

# Propensity score-based analysis of 30-day survival in cardiogenic shock patients supported with different microaxial left ventricular assist devices

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## Abstract

Microaxial LVADs are increasingly used for cardiogenic shock treatment. We compared the short-term outcome of patients supported with different microaxial devices for cardiogenic shock. A retrospective propensity score-adjusted analysis was performed in cardiogenic shock patients treated with either the Impella CP (n=64) or the Impella 5.0/5.5 (n=62) at two tertiary cardiac care centers between 1/14 and 12/19. Patients in the Impella CP group were significantly older ( $69.6 \pm 10.7$  vs  $58.7 \pm 11.9$  years,  $p=0.001$ ), more likely in an INTERMACS level 1 (76.6% vs 50%,  $p=0.003$ ) and post CPR (36% vs 13%,  $p=0.006$ ). The unadjusted 30-day survival was significantly higher in Impella 5.0/5.5 group (58% vs 36%,  $p=0.021$ , odds ratio (OR) for 30-day survival on Impella 5.0/5.5 was 3.68 (95% CI [1.46-9.90],  $p=0.0072$ ). After adjustment, the 30-day survival was similar for both devices (OR 1.23, 95% CI [0.34-4.18],  $p=0.744$ ). Lactate levels above 8 mmol/L and preoperative CPR were associated with a significant mortality increase in both cohorts (OR=10.7, 95% CI [3.45-47.34],  $p<0.001$ ; OR=13.2, 95% CI [4.28-57.89],  $p<0.001$ , respectively). Both Impella devices offer a similar effect with regards to survival in cardiogenic shock patients. Preoperative CPR or lactate levels exceeding 8 mmol/L immediately before implantation have a poor prognosis on Impella CP and Impella 5.0/5.5.

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E. Potapov reports institutional grants and fees and non-financial support from Abbott and Medtronic during the conduct of the study; institutional grants, fees and non-financial support from Berlin Heart and Abiomed outside the submitted work.

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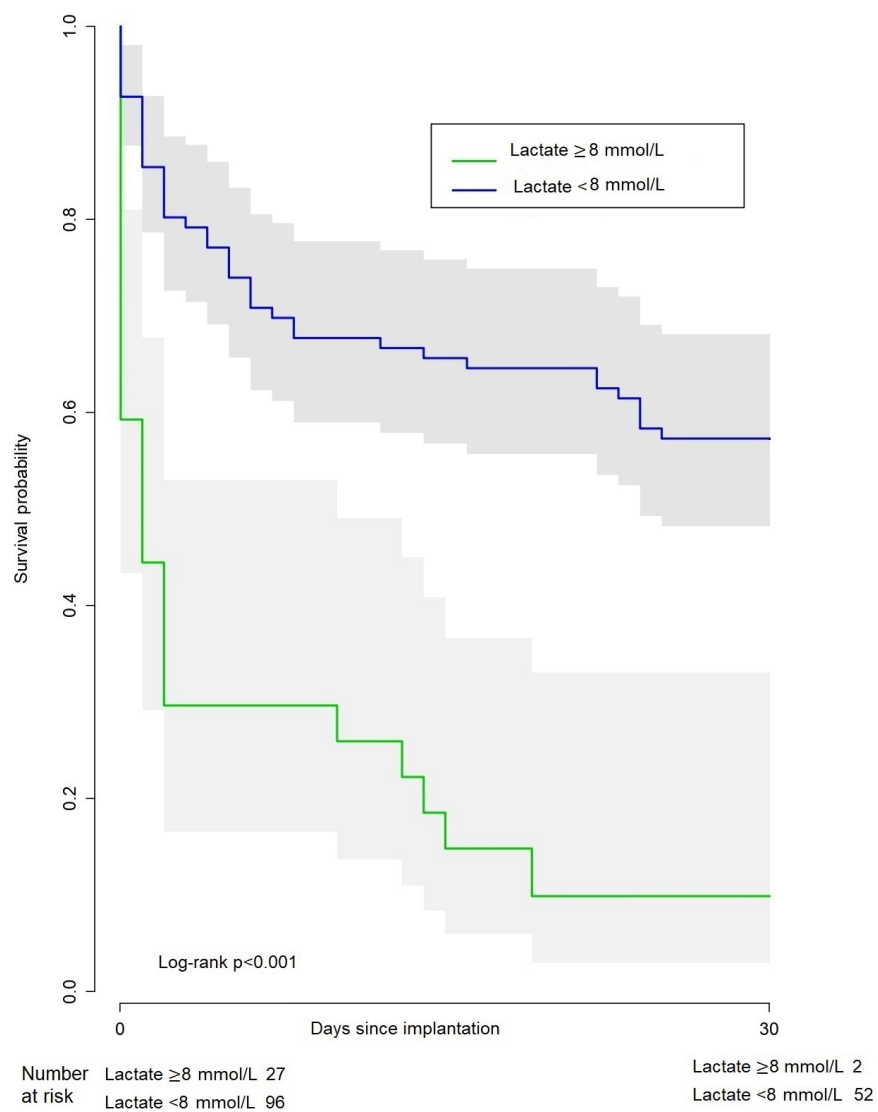
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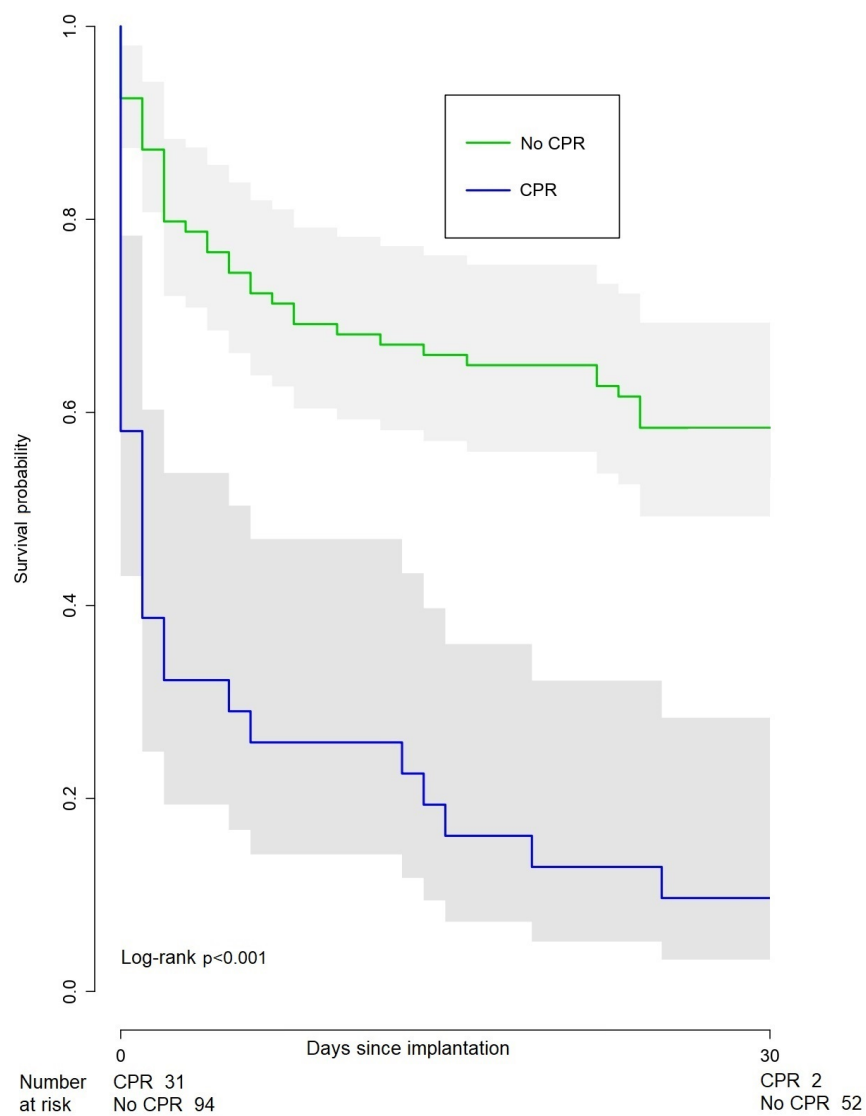
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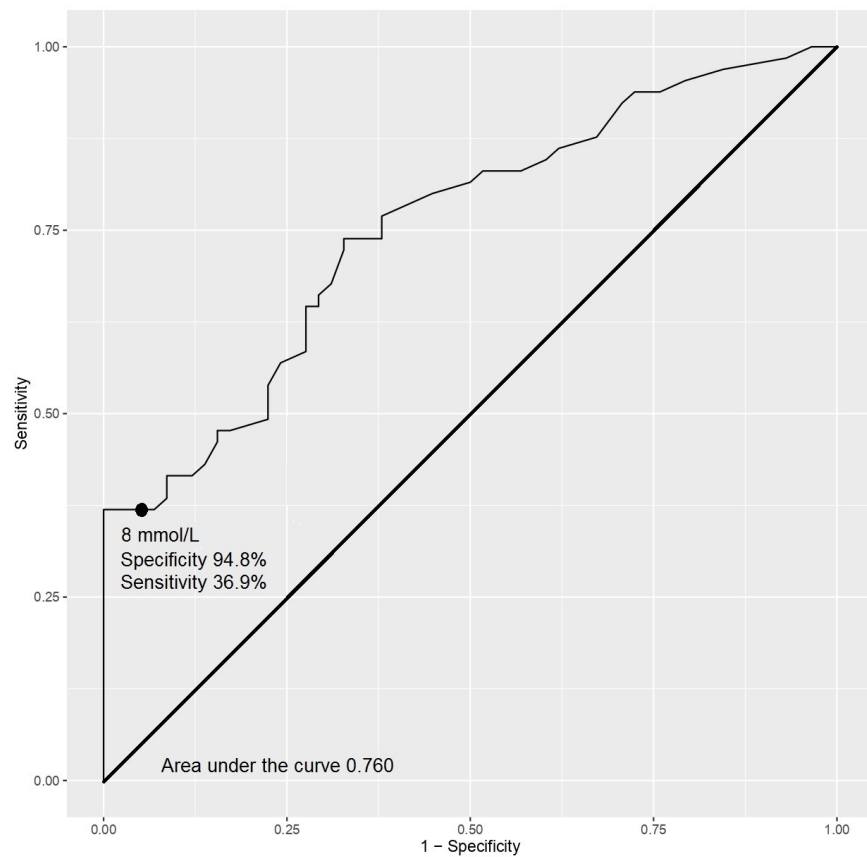
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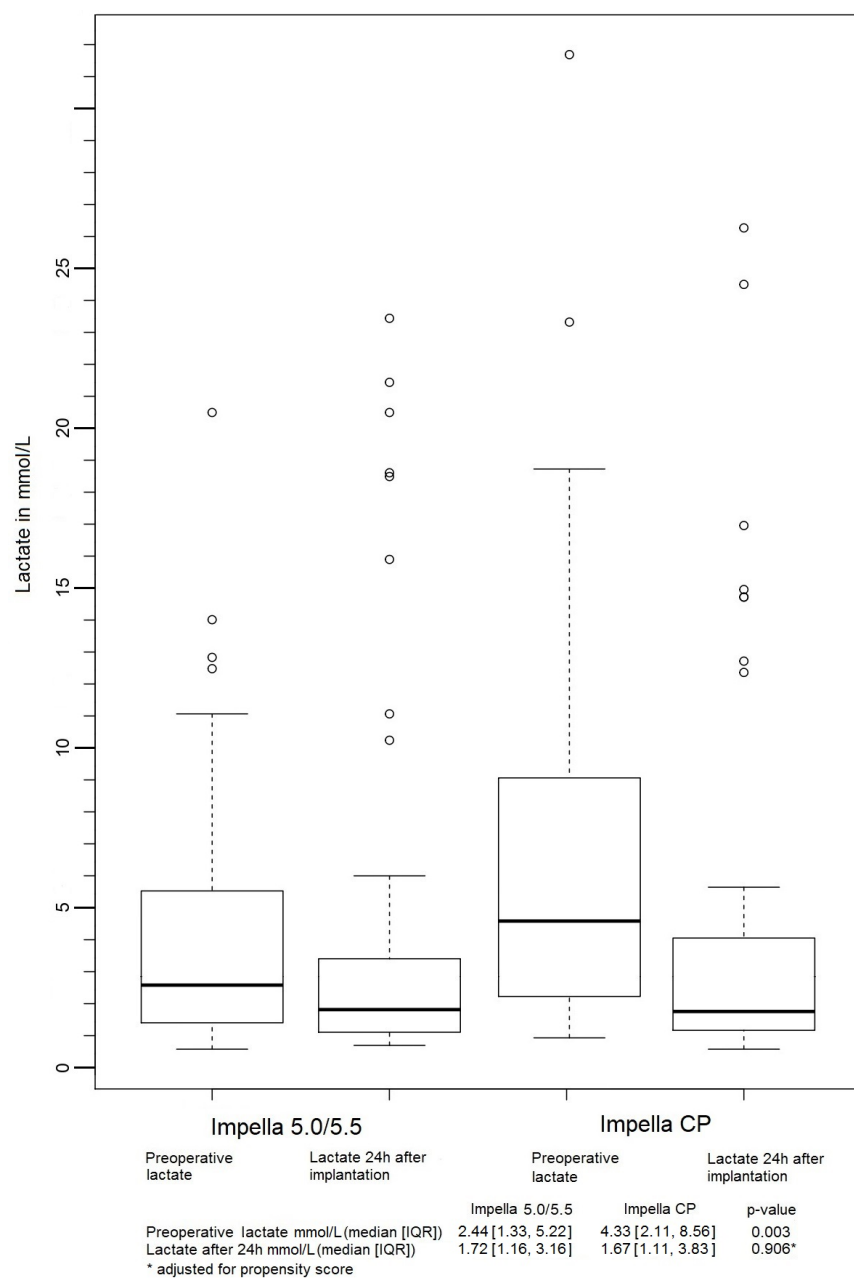
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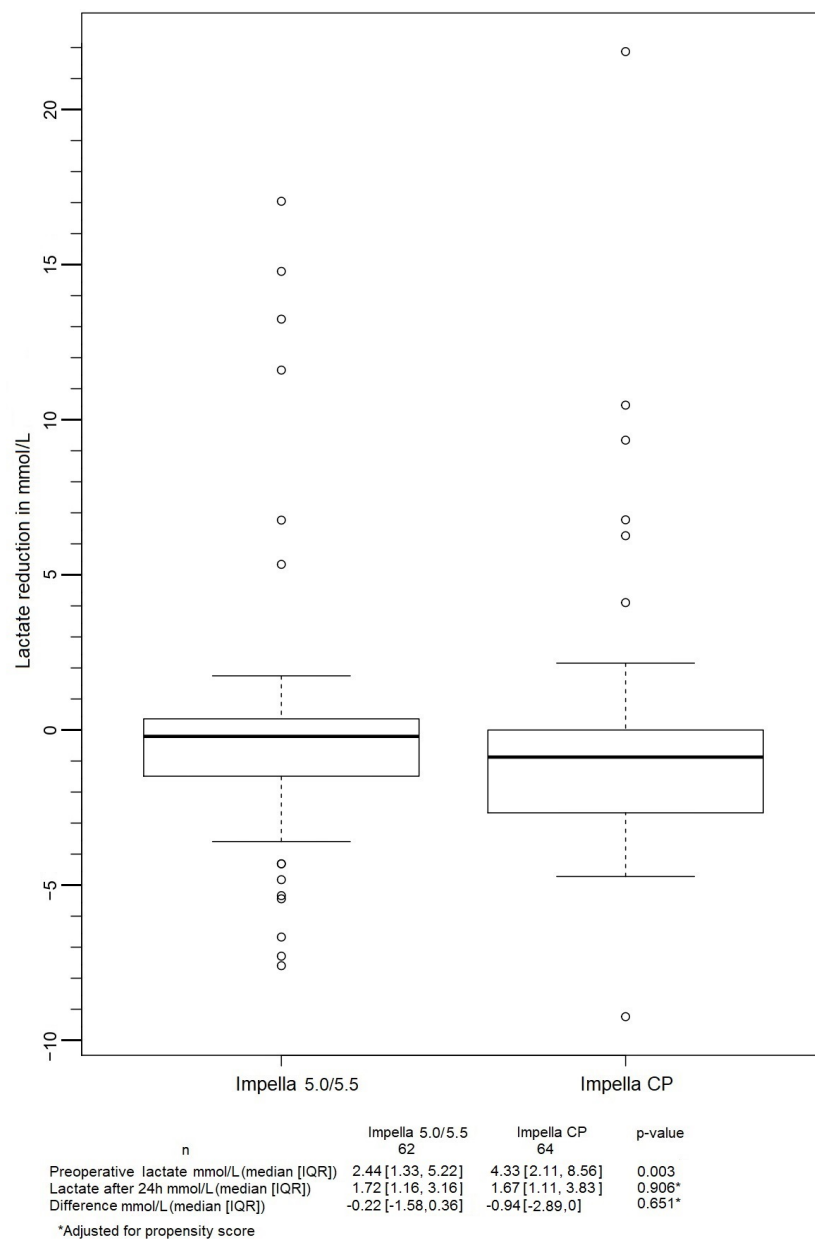
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## Algorithm for temporary mechanical circulatory device selection in cardiogenic shock

