

Normothermic Aortic Surgery as a Standard of Care in Type A Aortic Dissection

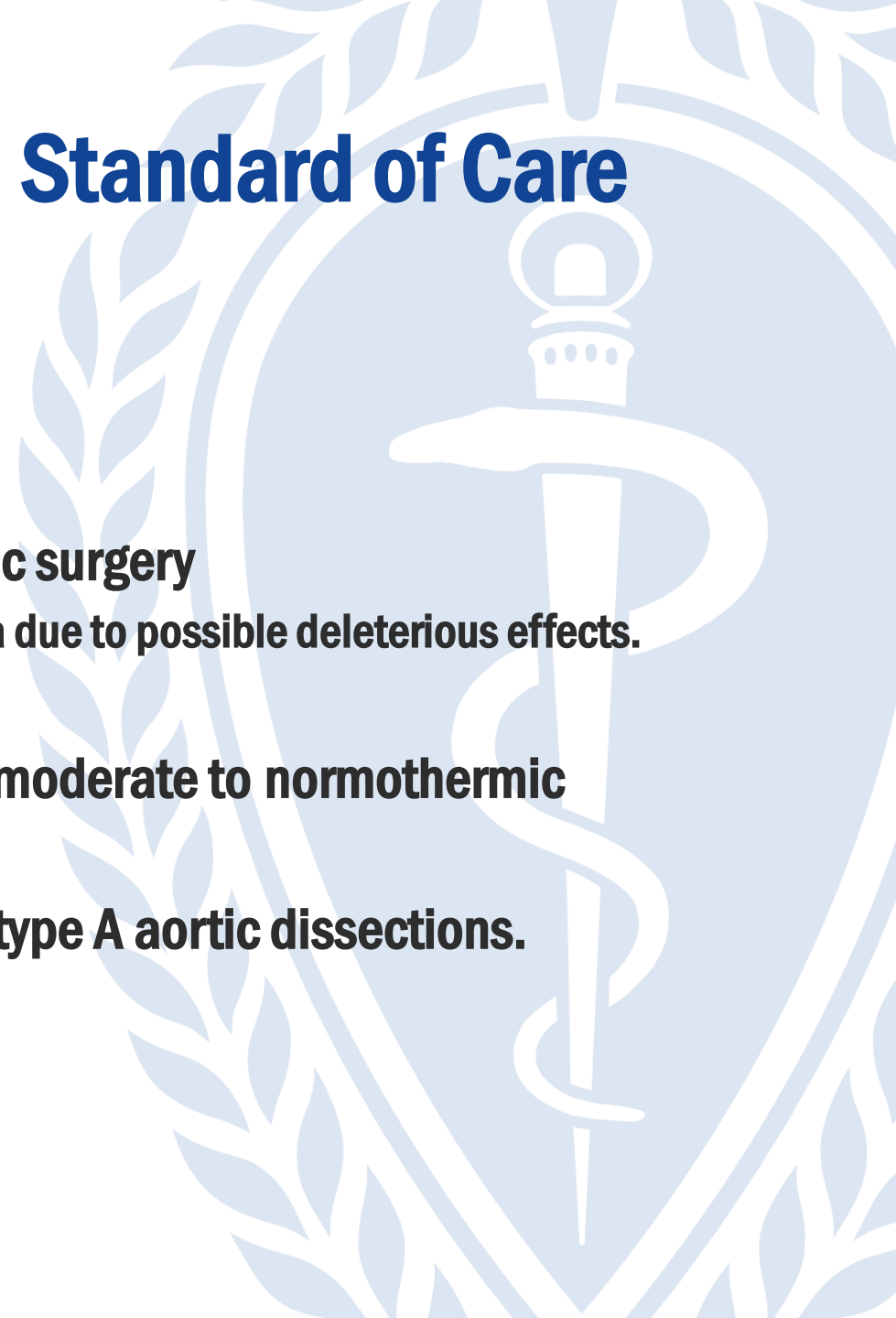
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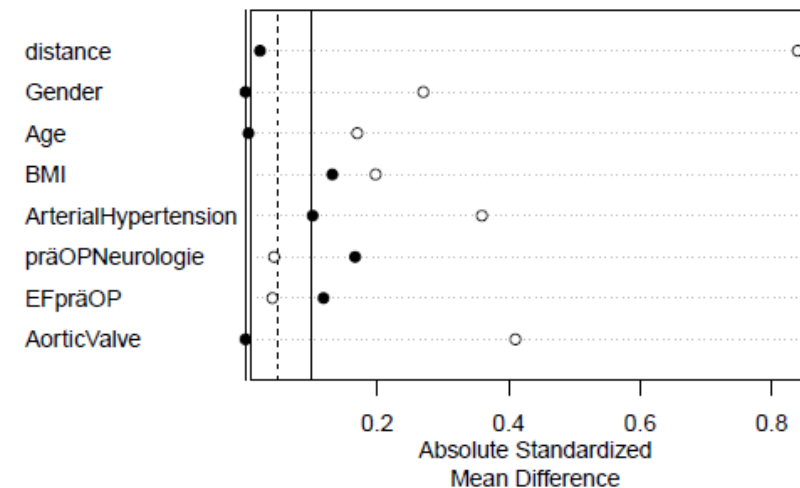
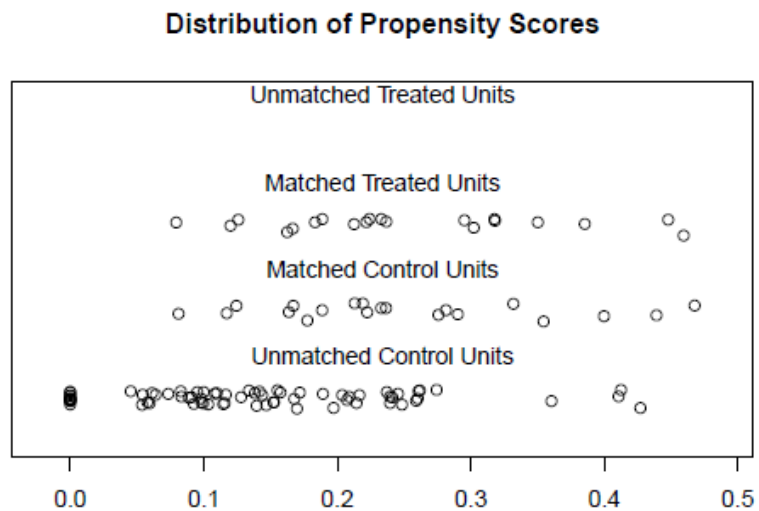
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- **Acute type A aortic dissection remains a surgical**
- **Deep to moderate hypothermia is a standard for aortic surgery**
 - **current trend in aortic surgery is to avoid deep hypothermia due to possible deleterious effects.**
- **Early studies have shown the feasibility and safety of moderate to normothermic aortic surgery.**
- **Our institution has adopted normothermic surgery in type A aortic dissections.**



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- In this retrospective propensity score-matched analysis, we aim to set a new standard of care for patients undergoing surgery for acute type A aortic dissection.
- Patients undergoing surgery in normothermia ($> 35\text{ }^{\circ}\text{C}$) were matched with patients undergoing surgery in mild hypothermia ($28 - 34\text{ }^{\circ}\text{C}$).
 - Out of 218 patients, 20 propensity score-matched pairs were created.



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- **Retrospective database analysis for patients undergoing surgery for acute type A aortic dissections from January 2007 to January 2023 at a single center.**
- **All patients were operated on using selective antegrade cerebral perfusion.**
- **Retrospective statistical analysis regarding 30-day mortality, new neurological symptoms, and benefits in the intra and postoperative course (e.g., bypass time, need for transfusions).**

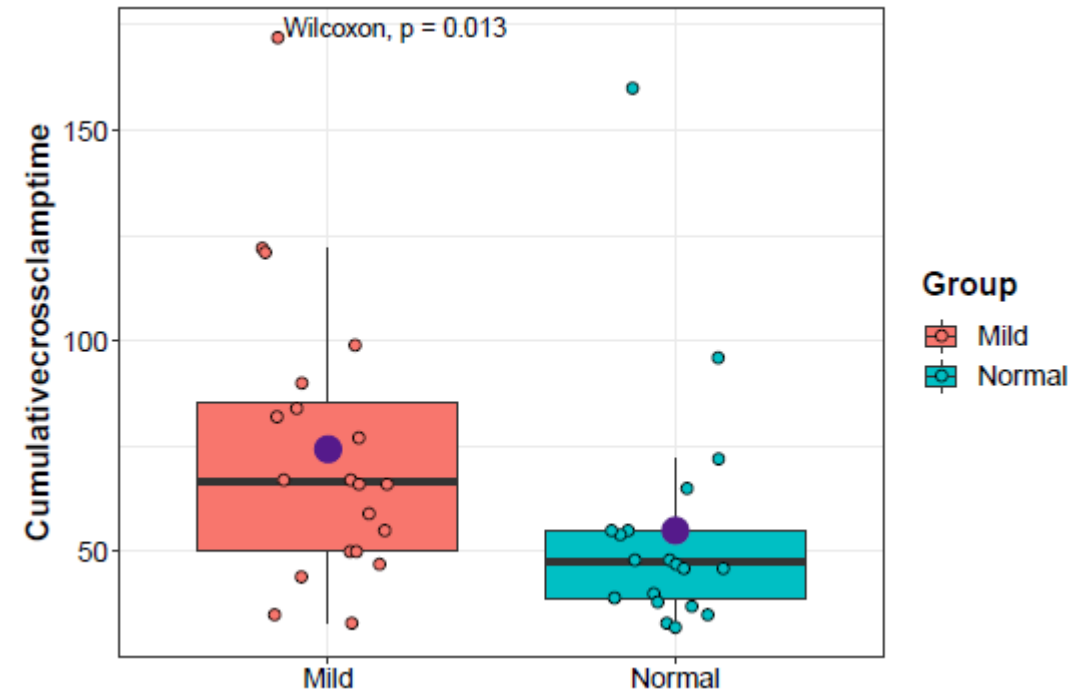
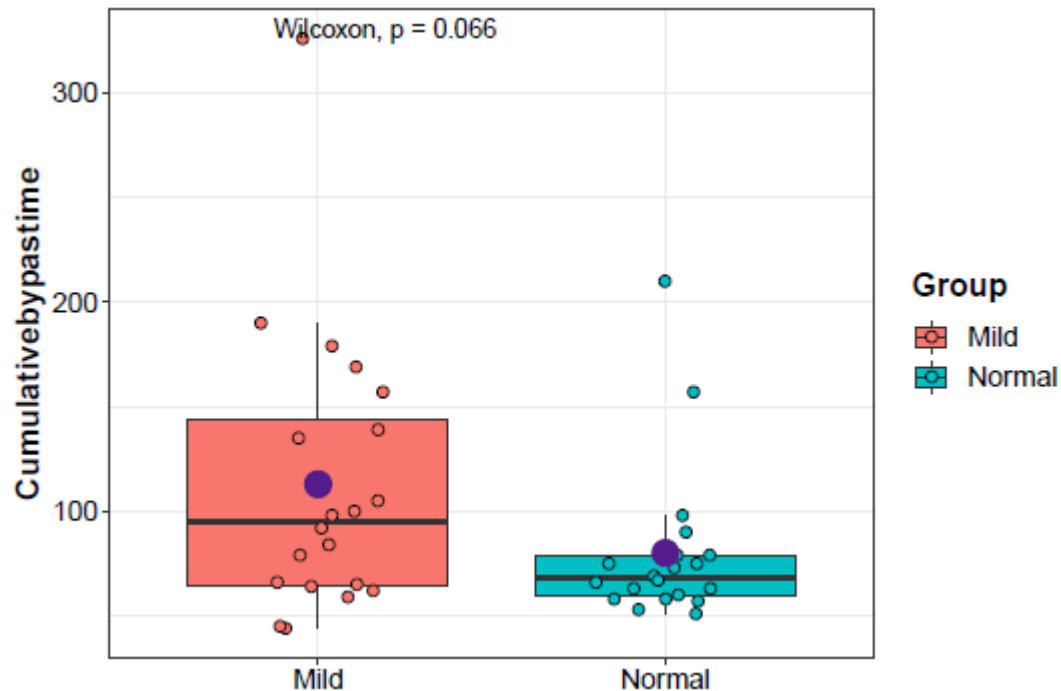
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	Normothermia Group	Hypothermia Group	p- value
Operation (min)	199.5 (173 – 236.3)	222 (178.8 – 260.3)	0.24
Cumulative bypass (min)	68 (59 – 79)	95 (64.8 – 143.5)	0.066
Aortic cross clamp (min)	47.5 (38.5 - 55)	66.5 (50 - 85.5)	0.013
Cerebral Perfusion (min)	11 (8.5 – 16.5)	13 (11 - 17)	0.22
Intensive Care Unit duration (d)	4.5 (3 - 8)	5 (3 – 7.5)	0.59
Intubation (h)	6 (4.8 - 8.3)	8 (5.5 – 15.5)	0.4
Blood Products Erythrocytes (n)	0 (0 – 2)	0.5 (0 – 2.5)	0.133
Blood Products Thrombocytes (n)	0 (0 – 2)	1 (0 – 4)	0.3
Cell Saver Blood (ml)	380 (526 – 1050)	320 (561 – 1759)	0.324
30 – Day Mortality (n)	1	3	0.6



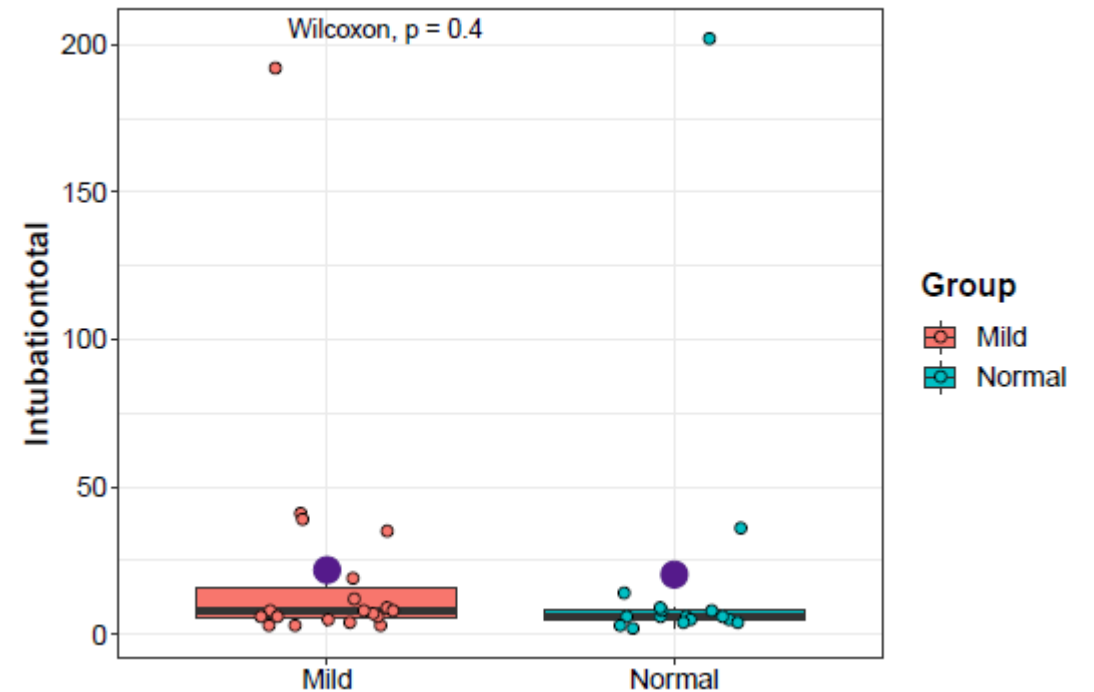
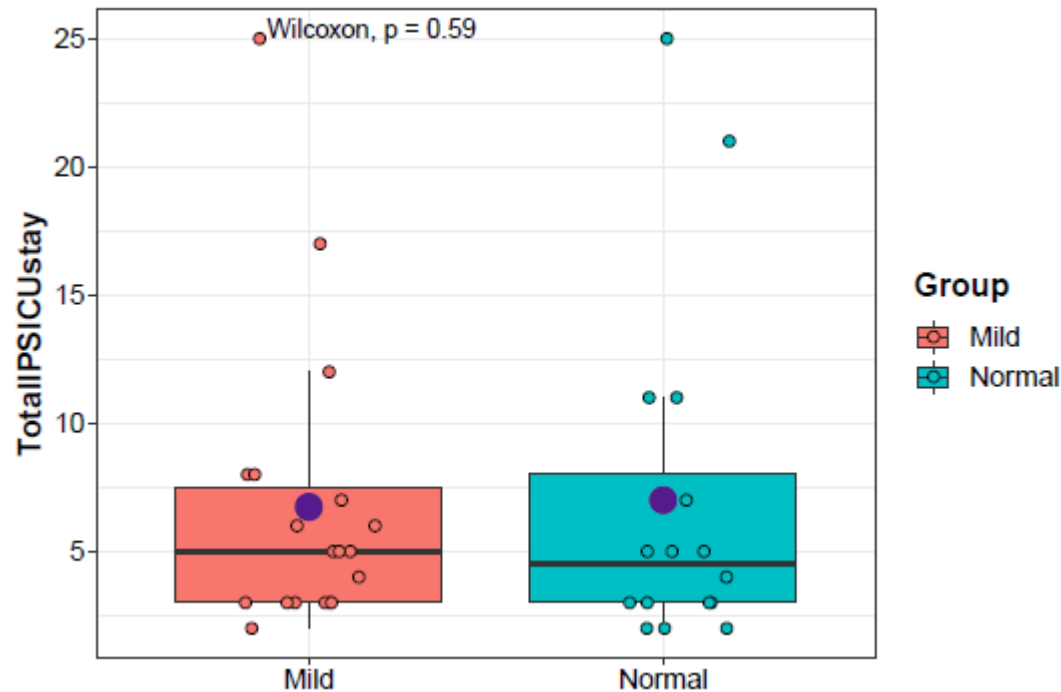
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- Our data shows very strong evidence favoring normothermia for lower extracorporeal bypass and cross-clamping times



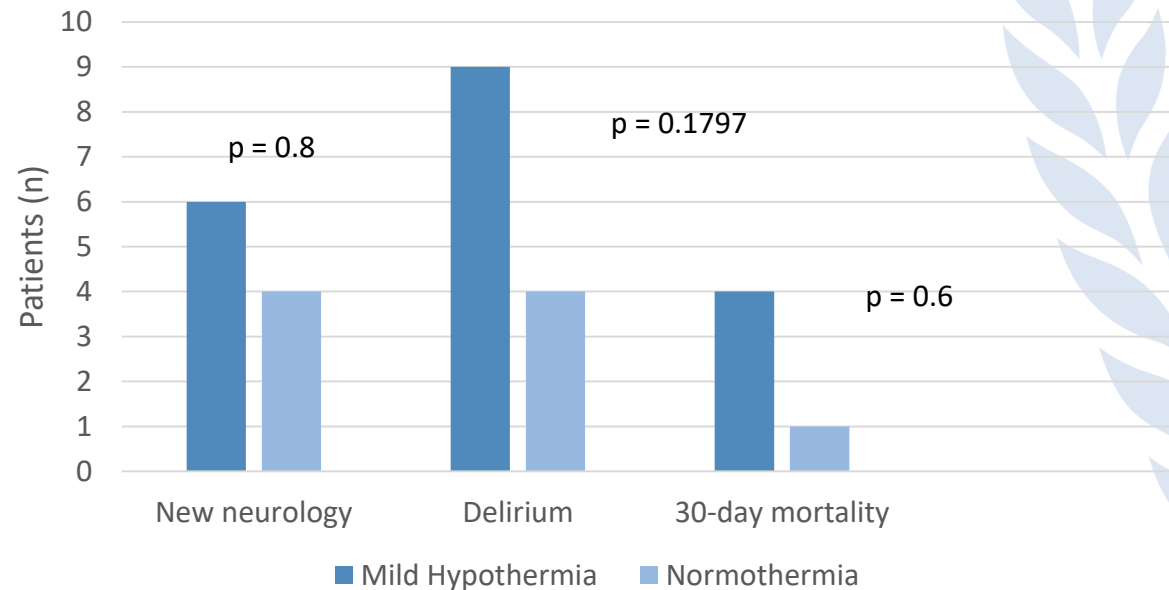
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- normothermic group had a limited trend towards lower ICU stay ($p = 0.59$), intubation times ($p = 0.4$), and postoperative delirium ($p = 0.1797$)



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- normothermic group had a limited trend towards postoperative delirium ($p = 0.1797$)
- No evidence favoring hypothermia in terms of new neurological symptoms ($n = 4$ vs 6 in both groups; $p = 0.8$), 30-day mortality ($n = 3$ vs. 1 patients, $p = 0.6$),



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- **Normothermic surgery in acute type A aortic dissection reduces operation times, extracorporeal perfusion, and aortic cross-clamping that might be beneficial for the patients.**
- **Moreover, normothermic surgery is comparable to the current hypothermic standard in aortic dissection surgery, and does not affect early mortality.**