

Unilateral or Bilateral Antegrade Cerebral Perfusion During Prolonged Circulatory Arrest in Surgery for Acute Type A Aortic Dissection?

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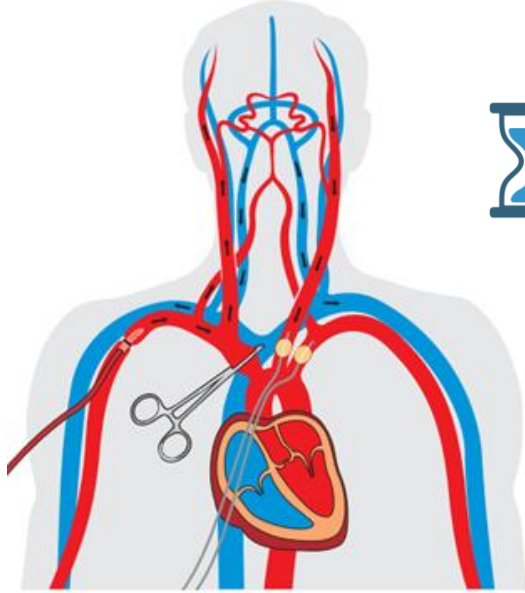
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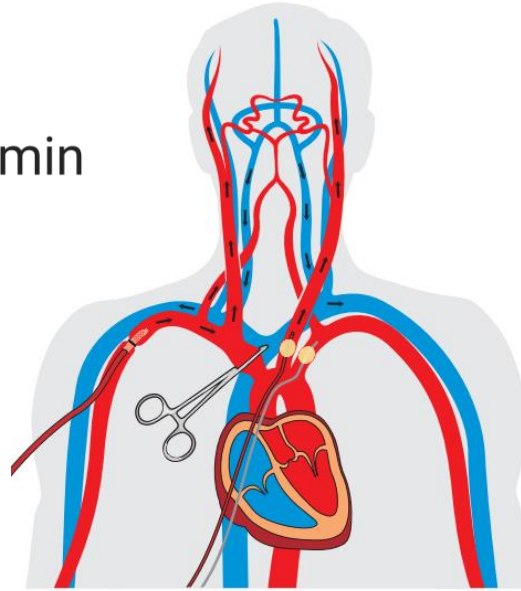


Background

Unilateral antegrade cerebral perfusion (uACP)



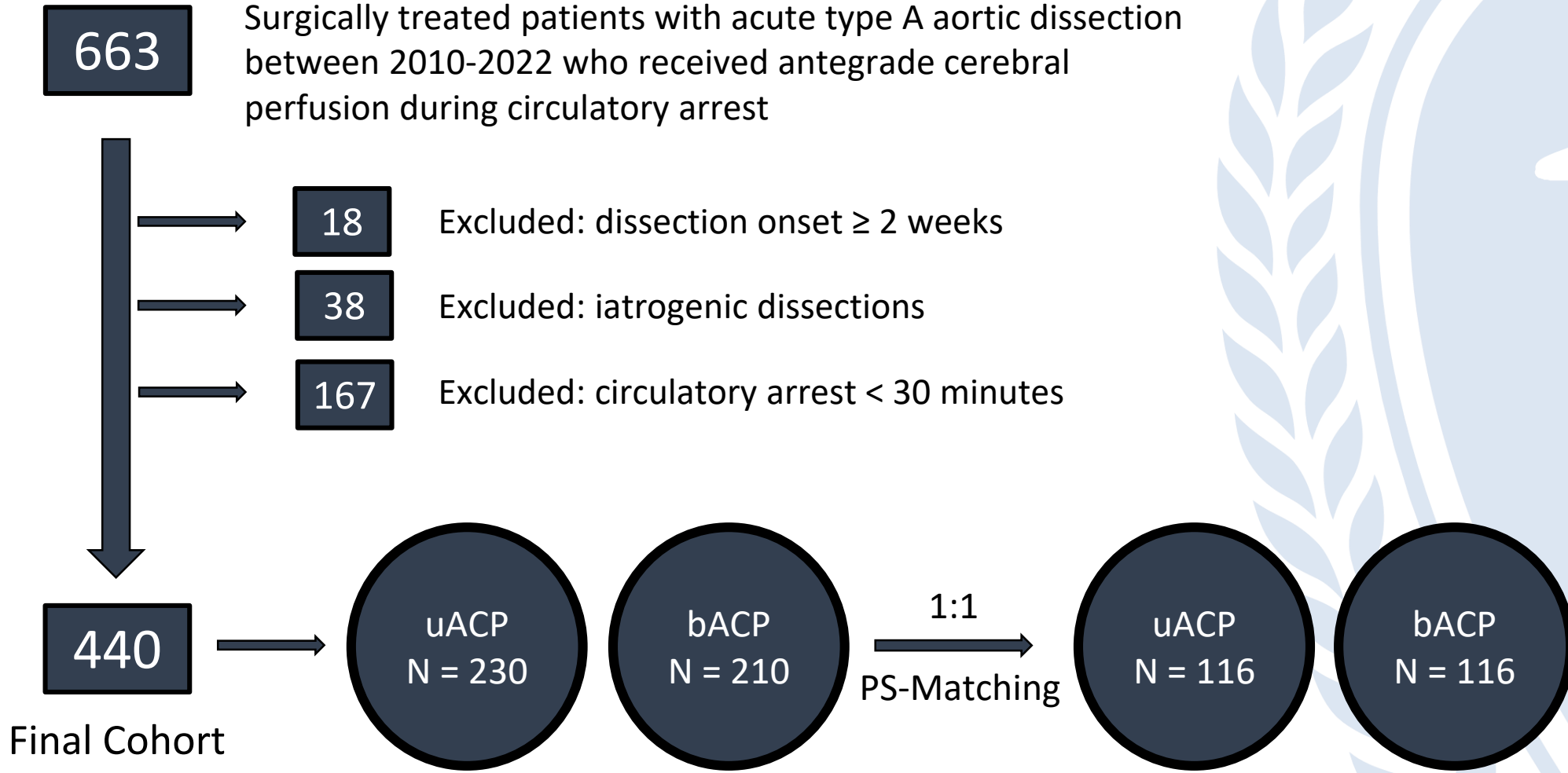
Bilateral antegrade cerebral perfusion (bACP)



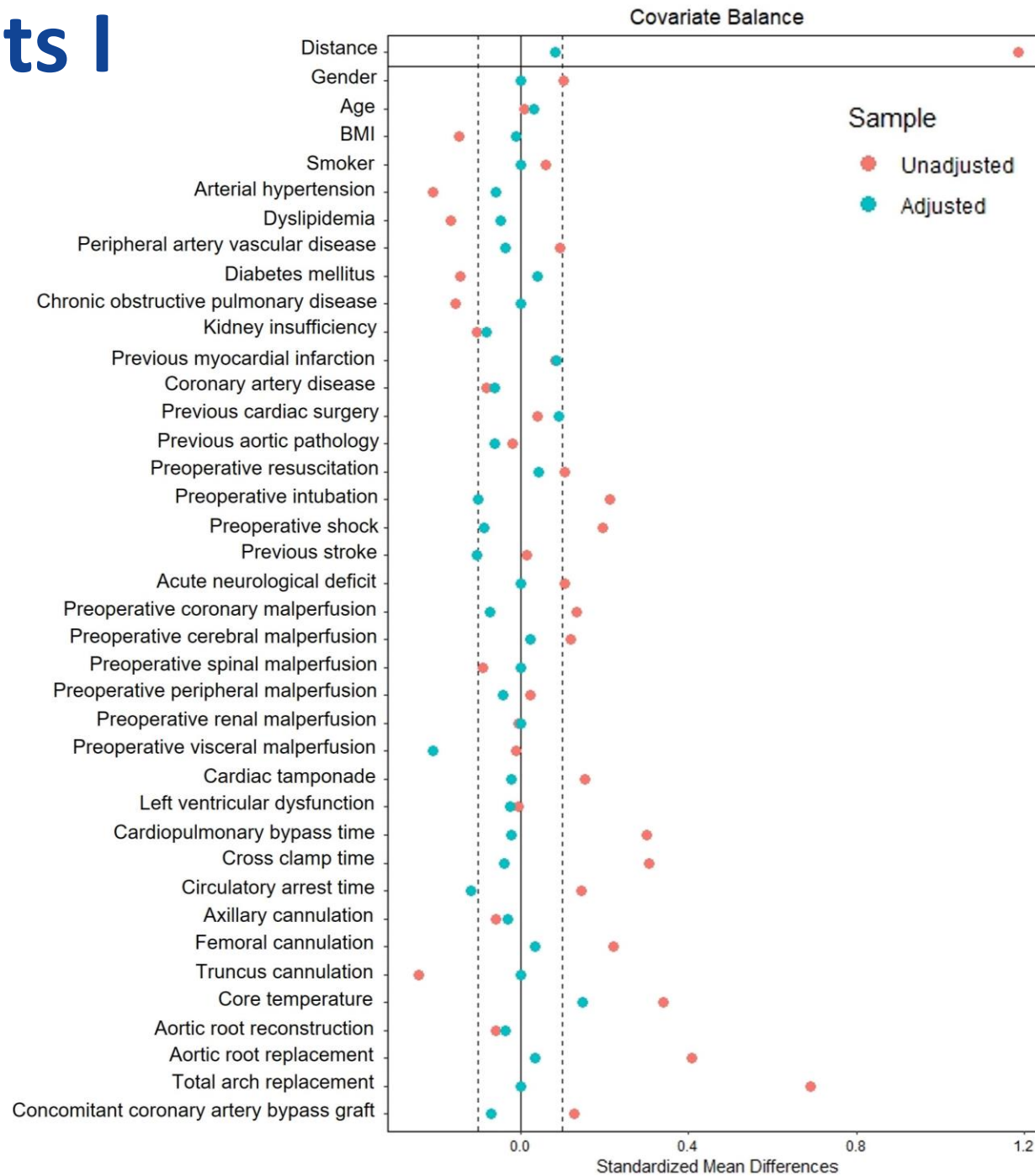
Is there a difference in terms of neurological outcome between uACP and bACP during prolonged circulatory arrest (≥ 30 minutes) in surgery for acute type A aortic dissection?



Methods



Results I



Results II (Extract)

Pre- and intraoperative variables n(%) / Median(IQR)	uACP (n=116)	bACP (n=116)	p-value
Gender (female)	46 (40)	46 (40)	1.000
Age (years)	64 (56 – 75)	66 (57 – 76)	0.894
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Preoperative resuscitation	2 (2)	3 (3)	0.653
Preoperative shock	19 (16)	15 (13)	0.460
Acute neurological deficit	31 (27)	31 (27)	1.000
Preoperative local malperfusion			
• Coronary	16 (14)	13 (11)	0.553
• Cerebral	19 (16)	20 (17)	0.861
• Spinal	3 (3)	3 (3)	1.000
• Peripheral	23 (20)	21 (18)	0.739
• Renal	9 (8)	9 (8)	1.000
• Visceral	12 (10)	6 (5)	0.142
Pericardial tamponade	17 (15)	16 (14)	0.852
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Cardiopulmonary bypass time (min)	211 (178 – 260)	209 (178 – 262)	0.701
Cross clamp time (min)	105 (87 – 141)	105 (88 – 134)	0.866
Circulatory arrest time (min)	42 (35 – 55)	42 (36 – 50)	0.591
Axillary cannulation	109 (94)	108 (93)	0.791
Femoral cannulation	2 (2)	3 (3)	0.653
Truncus cannulation	5 (4)	5 (4)	1.000
Core temperature (°C)	28 (25 – 28)	28 (26 – 28)	0.323
Conservative root repair	61 (53)	59 (51)	0.794
Root replacement	32 (28)	34 (29)	0.772
Total arch replacement	22 (19)	22 (19)	1.000
Concomitant CABG	6 (5)	3 (3)	0.520

No significant differences



Results III

Postoperative variables n(%) / Median(IQR)	uACP (n=116)	bACP (n=116)	p-value
ICU time (days)	6 (3 – 17)	7 (2 – 18)	0.946
Ventilation time	2 (1 – 9)	3 (1 – 13)	0.311
Re-intubation	9 (8)	19 (16)	0.066
Tracheotomy	22 (19)	24 (21)	0.743
Low cardiac output syndrome			
• Right heart failure	12 (10)	6 (5)	0.142
• Left heart failure	10 (9)	7 (6)	0.452
ECLS	14 (12)	10 (9)	0.391
Temporary dialysis	17 (15)	13 (11)	0.436
Revision for bleeding	23 (20)	26 (22)	0.631
Revision for malperfusion	19 (16)	14 (12)	0.448
Delirium	45 (39)	42 (36)	0.686
New postoperative stroke	12 (10)	9 (8)	0.495
Thirty-day mortality	20 (17)	24 (21)	0.505

No significant differences in terms of the incidence for new postoperative strokes



Conclusion



Both unilateral and bilateral antegrade cerebral perfusion are adequate cerebral perfusion strategies during circulatory arrest exceeding 30 minutes. Additional disease specific and anatomical factors may be considered to determine the optimal selective cerebral perfusion technique.

