Arterial Cannulation Strategy for Type A Aortic Dissection: A Network Meta-Analysis

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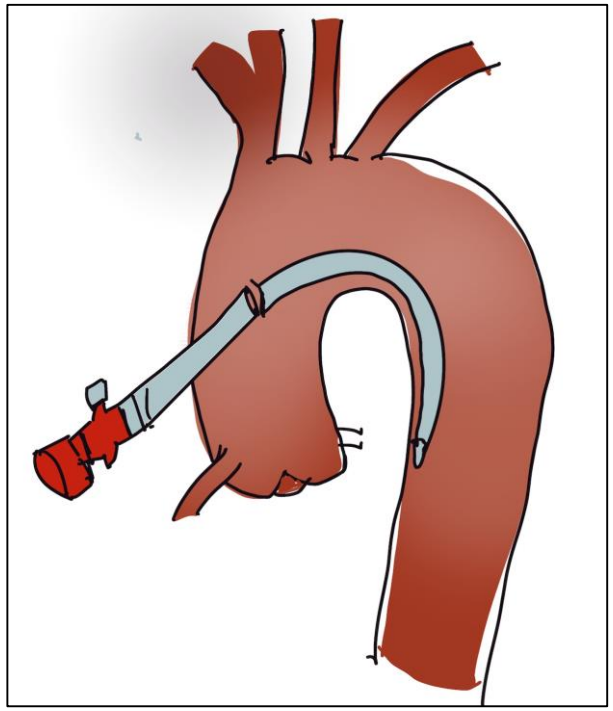
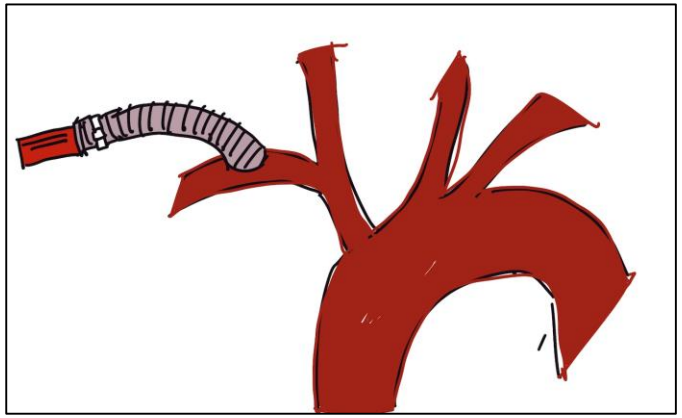
Disclosures

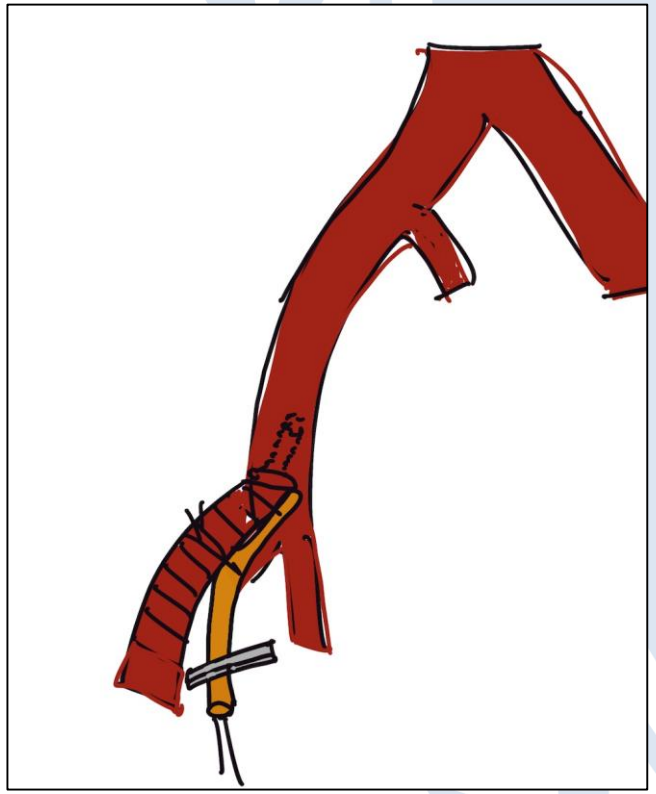
- **Dr. Fukuhara serves as a consultant and research investigator for Terumo Aortic, Artivion and Medtronic Inc.**
- **Others have nothing to disclose.**

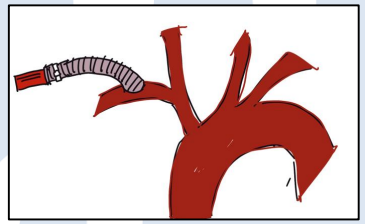
Introduction

- Cannulation strategy for acute type A dissection is controversial









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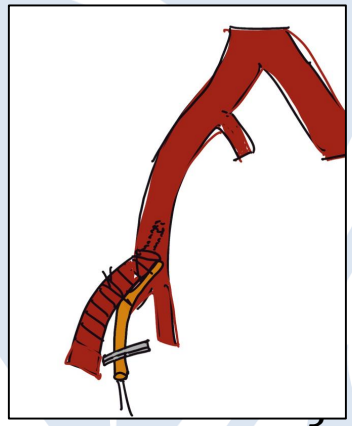


Methods

Network Meta-Analysis

Literature search

- Acute type A dissection
- Cannulation strategies
- Aortic, axillary, femoral or DAC (dual arterial cannulation)

Outcomes of interest

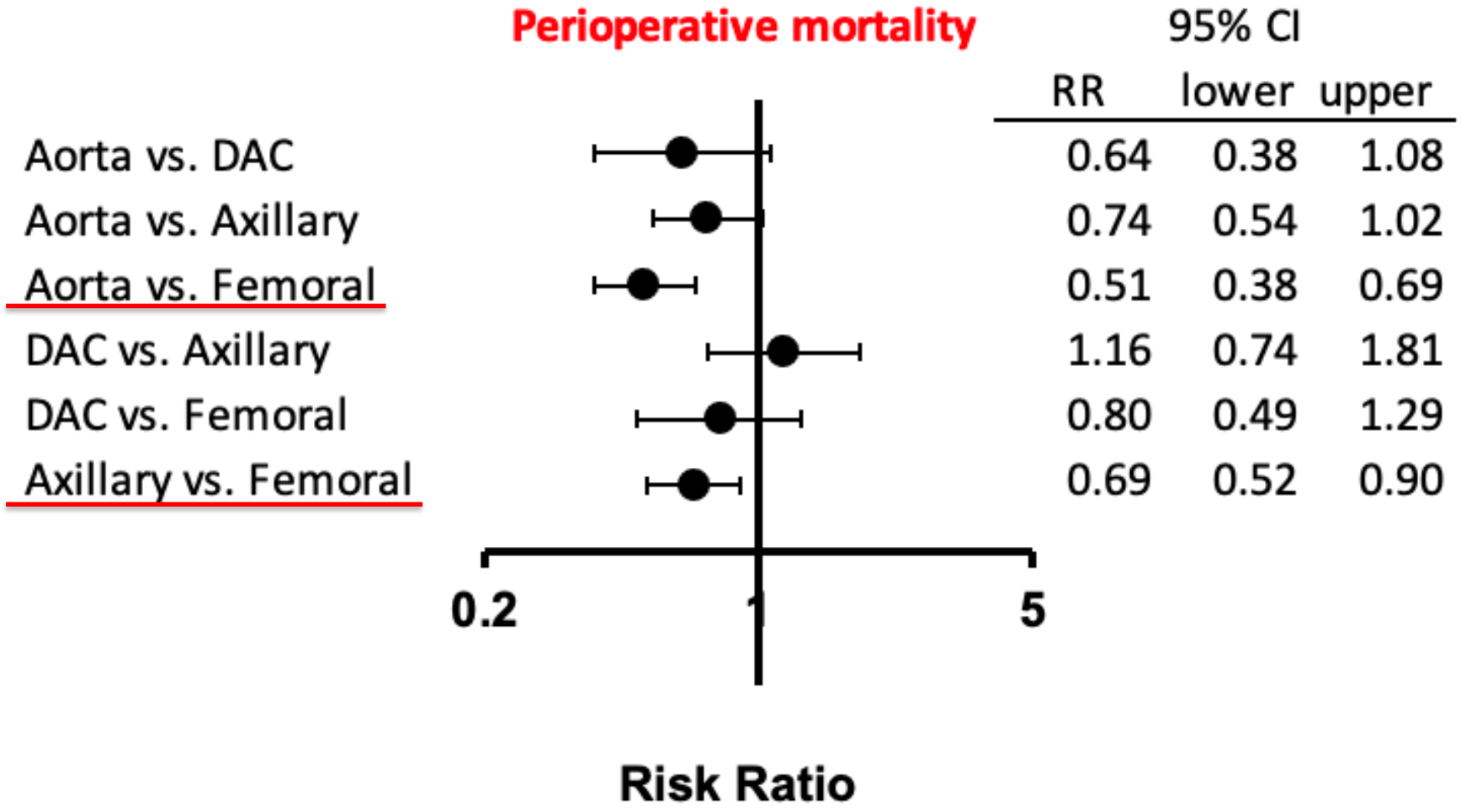
- Perioperative mortality
- Stroke
- Spinal cord injury
- Reoperation for bleeding
- Renal failure requiring HD
- Visceral malperfusion

Results

Author	Year	Adjustment	Patients (n)	Aortic (n)	DAC (n)	Axilla (n)	Femoral (n)
Pasic	2003	None	70	N/A	N/A	20	50
Reuthebuch	2004	None	122	N/A	N/A	62	60
Etz	2008	None	869	157	N/A	451	261
Kamiya	2009	None	235	82	N/A	N/A	153
Haldenwang	2012	None	122	15	N/A	92	15
Lee	2012	None	111	N/A	N/A	58	53
Schurr	2013	None	290	N/A	N/A	114	176
Klotz	2015	None	177	94	N/A	N/A	83
Hsu	2016	None	51	N/A	N/A	25	26
Klotz	2016	None	235	127	N/A	N/A	108
Stamou	2018	None	305	N/A	N/A	107	198
Gegouskov	2018	None	117	85	N/A	N/A	32
Ma	2018	None	62	33	N/A	N/A	29
Kreibich	2019	IPW	584	355	N/A	101	128
Kusadokoro	2020	PSM	805	52	104	104	104
Ram	2019	None	135	N/A	N/A	51	84
Rosinski	2019	None	775	65	N/A	617	93
Gokalp	2020	None	52	N/A	N/A	30	22
Tong	2021	PSM	646	N/A	N/A	85	85
Zhang	2021	PSM	231	N/A	154	77	N/A
Chang	2022	PSM	776	N/A	388	388	N/A
Liang	2022	IPW	488	N/A	171	217	100
Li	2022	PSM	274	N/A	137	137	N/A
Yousef	2022	Cox	577	490	N/A	54	33
Lemaire	2023	None	135	16	N/A	21	98
Juvonen	2023	PSM	1228	614	N/A	614	N/A
Total			9742	954	850	3425	1991

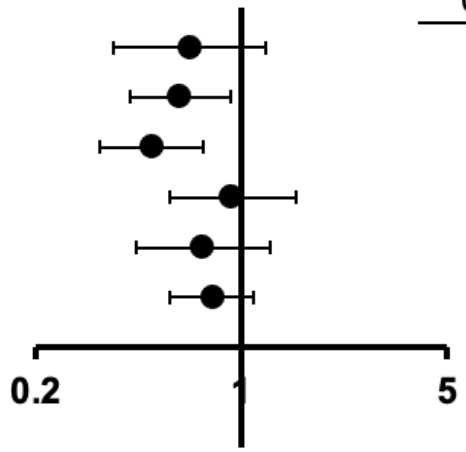
DAC: dual arterial cannulation, IPW: inverse probability weighting, PSM: propensity-score matched

Preoperative outcome



Preoperative outcome

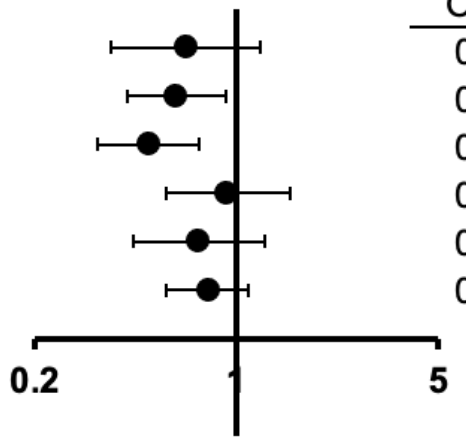
Reoperation for bleeding



	95% CI		
	OR	lower	upper
Aorta vs. DAC	0.67	0.37	1.21
Aorta vs. Axillary	0.62	0.42	0.92
Aorta vs. Femoral	0.50	0.33	0.74
DAC vs. Axillary	0.93	0.57	1.53
DAC vs. Femoral	0.74	0.44	1.26
Axillary vs. Femoral	0.80	0.57	1.10

Risk Ratio

Dialysis



	95% CI		
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Aorta vs. DAC	0.67	0.37	1.21
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Aorta vs. Femoral	0.50	0.33	0.74
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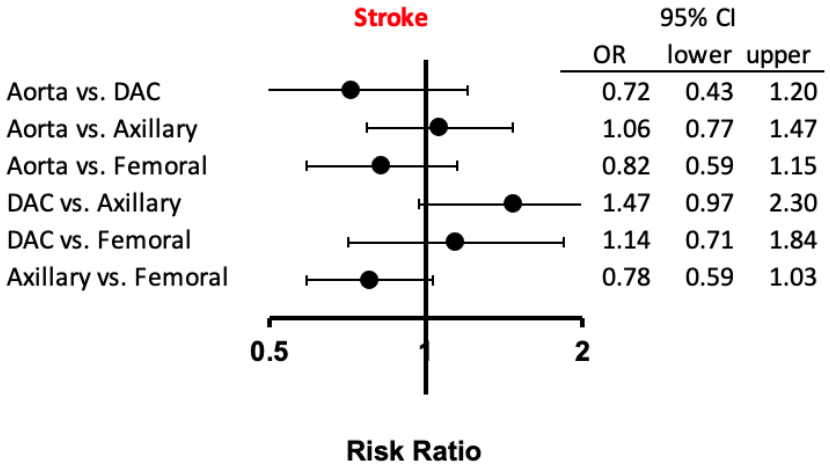
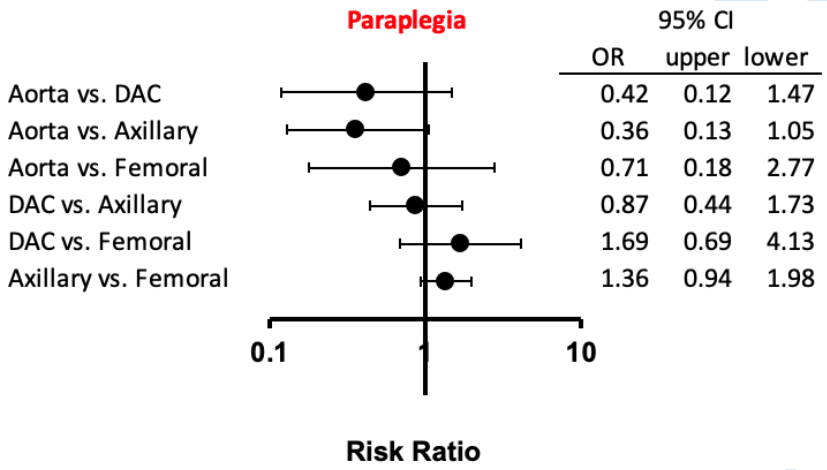
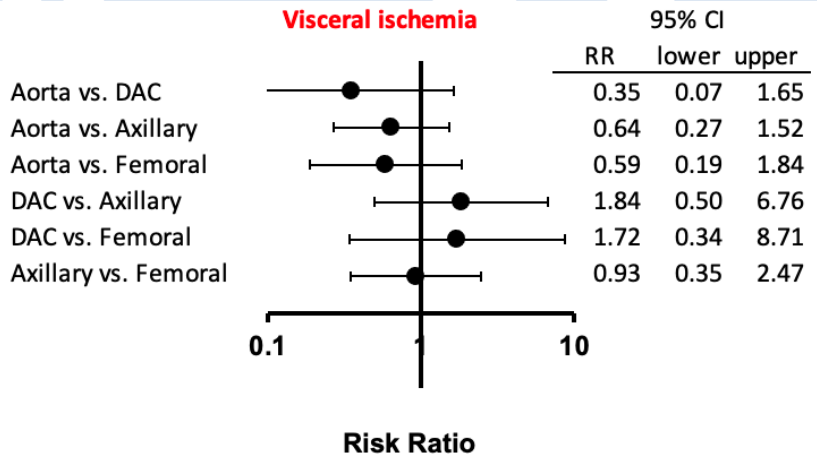
DAC vs. Femoral	0.74	0.44	1.26
Axillary vs. Femoral	0.80	0.57	1.10

Risk Ratio

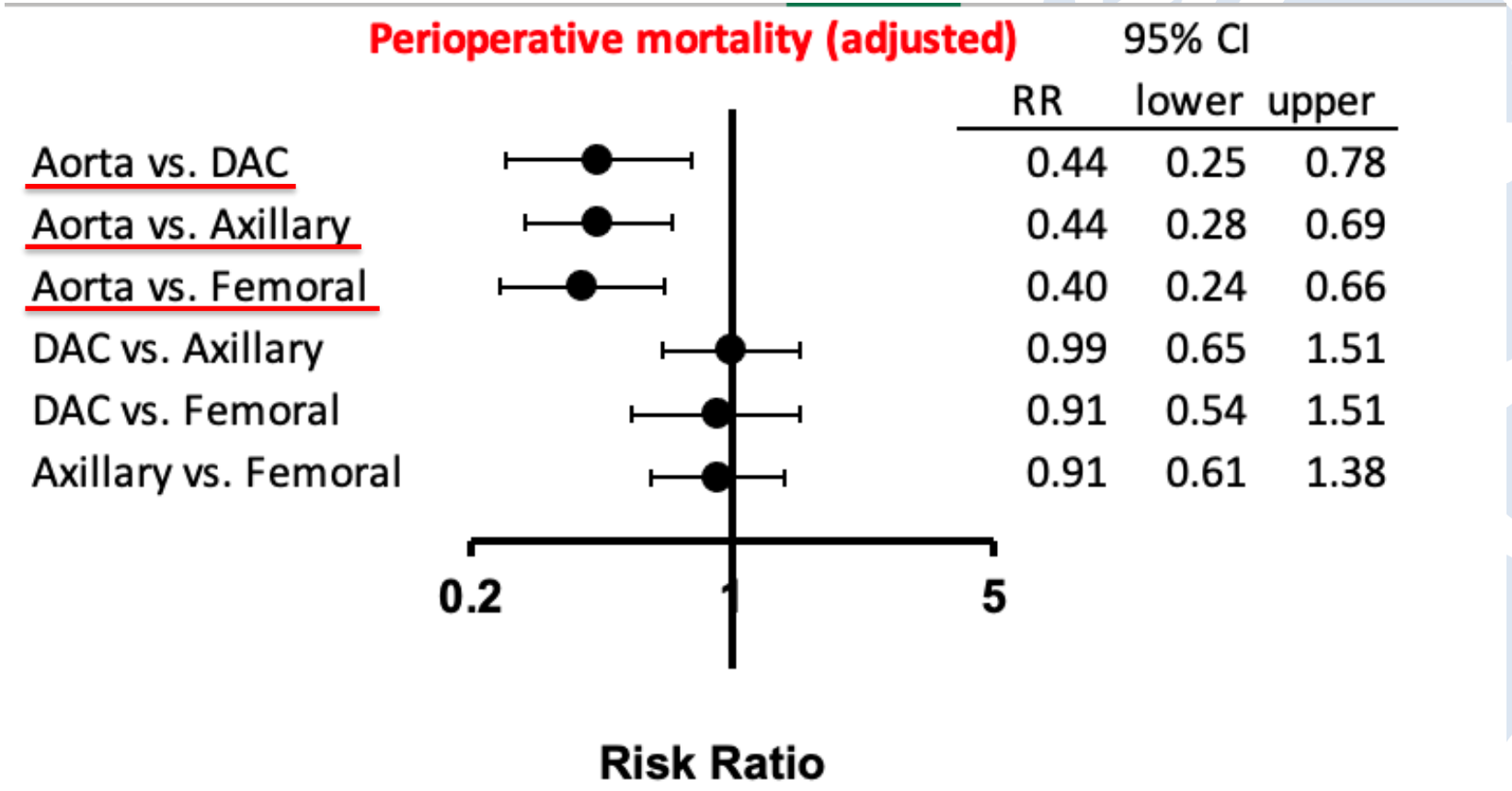
Preoperative outcome







Adjusted outcome only



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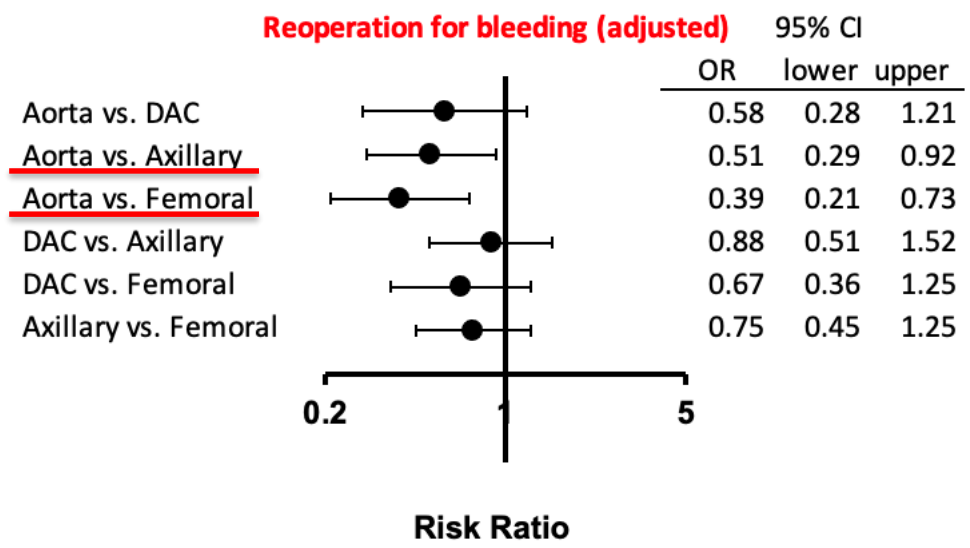

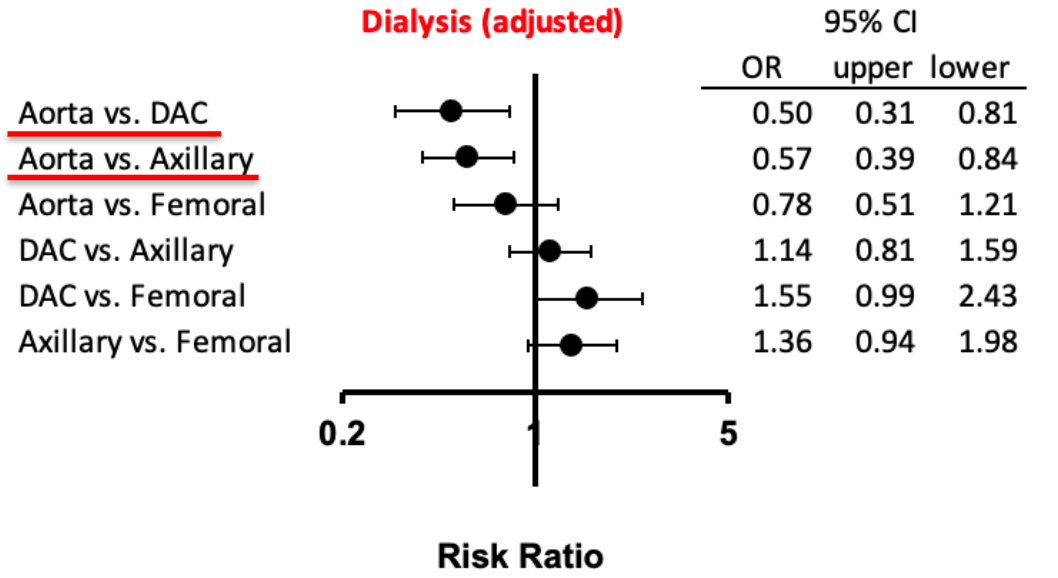

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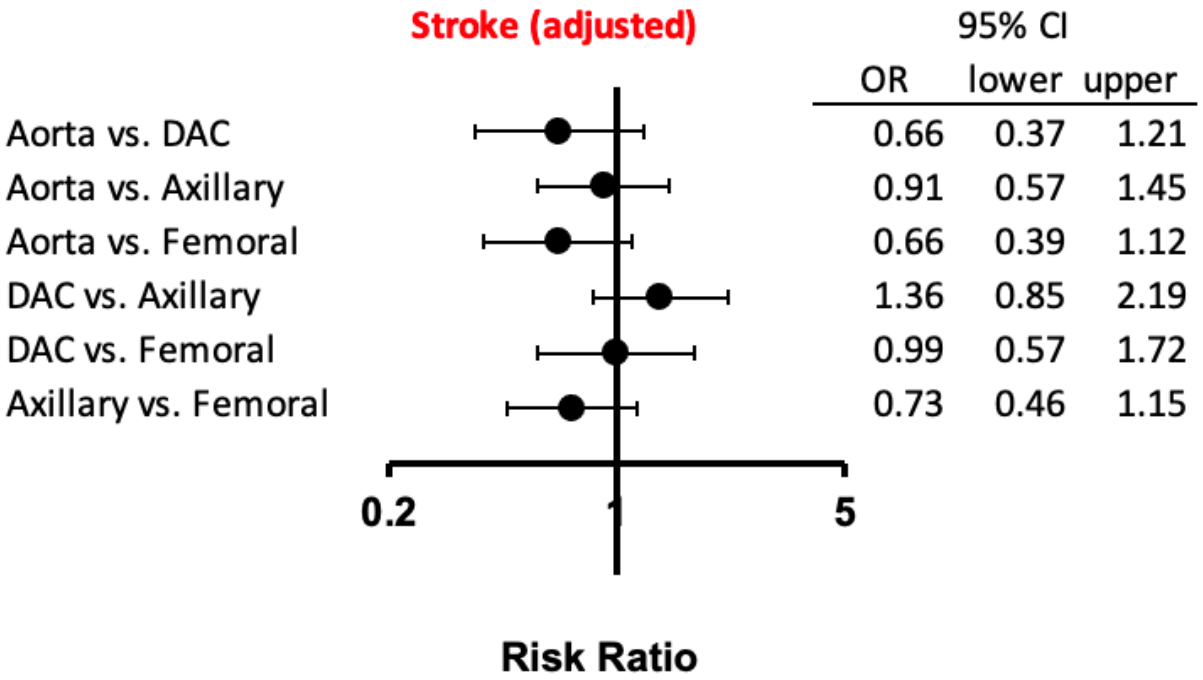

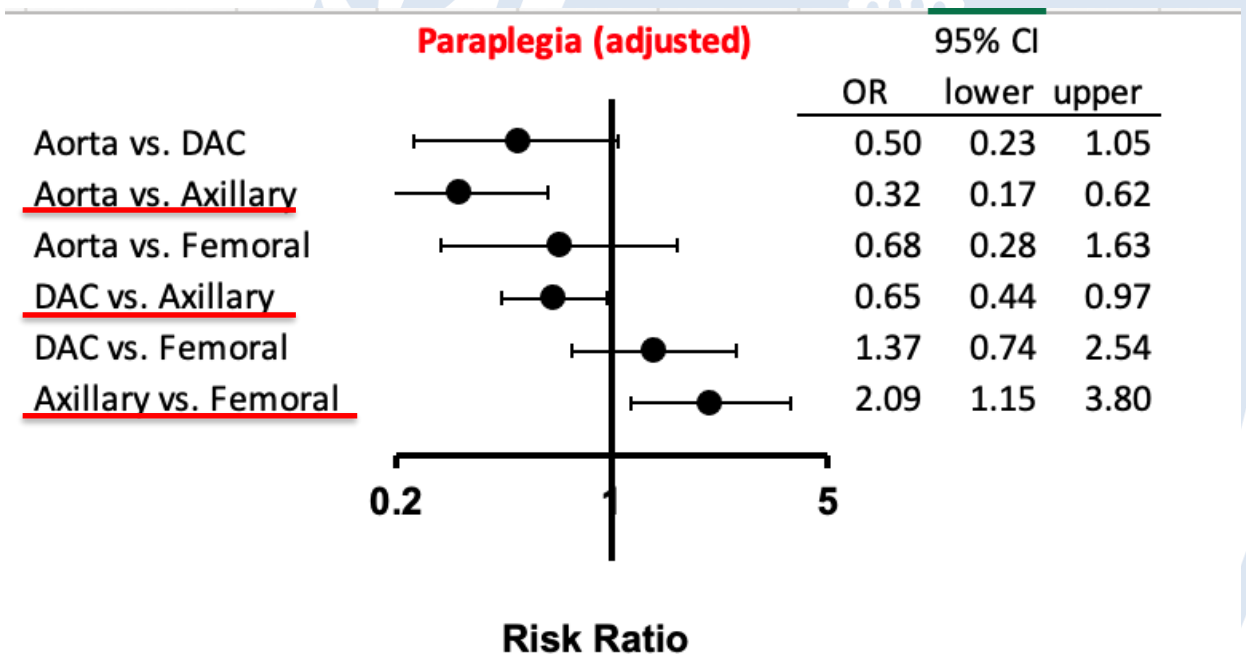

Conclusion

- **Ascending aortic cannulation for acute type A cannulation might be associated with improved perioperative outcomes compared with other cannulation strategies**

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