

**Supplement 2: Risk factors for a bloody puncture during regional anesthesia procedures**

Risk of bloody tap – all procedures	multivariate regression before matching		multivariate regression after matching	
	adjusted OR (95% CI)	P	adjusted OR (95% CI)	P
Antithrombotic therapy	1.16 (1.04-1.30)	<b>0.011</b>	1.18 (1.04-1.35)	<b>0.013</b>
Female sex	1.17 (1.05-1.30)	<b>0.003</b>	1.19 (1.04-1.35)	<b>0.013</b>
Age (yr)	1.00 (1.00-1.01)	0.616	1.00 (1.00-1.01)	0.062
BMI [kg/m <sup>2</sup> ]	1.01 (1.00-1.02)	<b>0.008</b>	1.02 (1.01-1.03)	<b>&lt;0.001</b>
ASA 2	0.71 (0.60-0.85)	<b>&lt;0.001</b>	0.62 (0.48-0.81)	<b>&lt;0.001</b>
ASA 3	0.99 (0.83-1.19)	0.931	0.91 (0.70-1.20)	0.509
ASA ≥4	0.98 (0.67-1.45)	0.933	0.74 (0.45-1.23)	0.245
Renal insufficiency*	1.14 (1.01-1.30)	<b>0.041</b>	1.15 (0.98-1.35)	0.084
Neuraxial vs peripheral punctures	1.46 (1.29-1.66)	<b>&lt;0.001</b>	1.21 (1.03-1.42)	<b>0.018</b>
Sedation or GA vs awake	2.65 (2.35-2.99)	<b>&lt;0.001</b>	2.29 (1.97-2.65)	<b>&lt;0.001</b>
Catheter vs single shot	0.62 (0.54-0.70)	<b>&lt;0.001</b>	0.55 (0.47-0.64)	<b>&lt;0.001</b>
No use of ultrasound	2.29 (1.92-2.73)	<b>&lt;0.001</b>	2.23 (1.77-2.81)	<b>&lt;0.001</b>
Multiple skin puncture	3.52 (3.15-3.94)	<b>&lt;0.001</b>	3.23 (2.81-3.71)	<b>&lt;0.001</b>
Year of surgery	0.97 (0.95-0.99)	<b>&lt;0.001</b>	0.97 (0.94-0.99)	<b>0.004</b>
<b>Risk of bloody tap – peripheral punctures</b>				
Antithrombotic therapy	1.60 (1.33-1.93)	<b>&lt;0.001</b>	1.48 (1.19-1.82)	<b>&lt;0.001</b>
Female sex	0.99 (0.83-1.17)	0.890	1.06 (0.86-1.32)	0.583
Age (yr)	1.00 (1.00-1.01)	0.236	1.00 (1.00-1.01)	0.348
BMI [kg/m <sup>2</sup> ]	1.01 (0.99-1.02)	0.232	1.01 (1.00-1.03)	0.094
ASA 2	0.85 (0.65-1.11)	0.225	0.59 (0.40-0.86)	<b>0.006</b>
ASA 3	1.23 (0.95-1.60)	0.116	0.99 (0.66-1.48)	0.946
ASA ≥4	1.13 (0.61-2.13)	0.694	0.55 (0.22-1.38)	0.205
Renal insufficiency*	1.03 (0.83-1.28)	0.807	0.95 (0.73-1.24)	0.711
Sedation or GA vs awake	1.76 (1.42-2.20)	<b>&lt;0.001</b>	1.87 (1.42-2.46)	<b>&lt;0.001</b>
Catheter vs single shot	0.62 (0.52-0.74)	<b>&lt;0.001</b>	0.62 (0.50-0.78)	<b>&lt;0.001</b>
No use of ultrasound	2.15 (1.78-2.60)	<b>&lt;0.001</b>	2.25 (1.76-2.88)	<b>&lt;0.001</b>
Multiple skin puncture	6.32 (5.27-7.57)	<b>&lt;0.001</b>	6.11 (4.89-7.63)	<b>&lt;0.001</b>
Year of surgery	0.95 (0.92-0.98)	<b>0.001</b>	0.96 (0.92-1.00)	<b>0.047</b>
<b>Risk of bloody tap – neuraxial punctures</b>				
Antithrombotic therapy	0.95 (0.82-1.10)	0.523	1.00 (0.85-1.18)	0.994
Female sex	1.27 (1.11-1.45)	<b>0.001</b>	1.21 (1.02-1.43)	<b>0.030</b>
Age (yr)	1.00 (1.00-1.00)	0.807	1.00 (1.00-1.01)	0.243
BMI [kg/m <sup>2</sup> ]	1.01 (1.00-1.02)	<b>0.023</b>	1.02 (1.00-1.03)	<b>0.013</b>
ASA 2	0.68 (0.53-0.86)	<b>0.001</b>	0.72 (0.49-1.05)	0.089
ASA 3	0.92 (0.73-1.17)	0.501	1.00 (0.68-1.47)	0.988
ASA ≥4	0.95 (0.58-1.54)	0.827	0.92 (0.48-1.78)	0.815
Renal insufficiency*	1.18 (1.01-1.39)	<b>0.039</b>	1.22 (1.00-1.50)	<b>0.049</b>
Sedation or GA vs awake	2.90 (2.52-3.35)	<b>&lt;0.001</b>	2.41 (2.03-2.87)	<b>&lt;0.001</b>
Catheter vs single shot	0.66 (0.56-0.79)	<b>&lt;0.001</b>	0.56 (0.44-0.71)	<b>&lt;0.001</b>
No use of ultrasound	1.55 (0.93-2.56)	0.090	1.27 (0.62-2.58)	0.516
Multiple skin puncture	2.69 (2.34-3.08)	<b>&lt;0.001</b>	2.48 (2.09-2.94)	<b>&lt;0.001</b>
Year of surgery	0.98 (0.96-1.00)	0.116	0.97 (0.95-1.00)	0.059

**Supplement 2.** OR=Odds Ratio, adjusted for antithrombotic therapy, sex, age, BMI, ASA, renal insufficiency, puncture site, state of consciousness during block implementation, catheter or single shot, use of ultrasound, multiple skin puncture, and year of surgery. CI= Confidence interval. ASA=American Society of Anesthesiologists (Physical Status Classification System). GA=General anesthesia. \*dialysis or CKD EPI < 60ml/min/1.73m<sup>2</sup>. Propensity score matching considered all potential confounding variables.