

Consideration for Neuraxial Anesthesia in the Thrombocytopenic Patient

Case Presentation

39 y.o. female presented to high-risk clinic with thrombocytopenia. Followed by Hematology.

Pre-op platelets 37,000 X 10⁶/L. Physical exam and other labs unremarkable.

1 unit of platelets transfused per surgery and hematology. Spinal anesthesia performed.

Neuro checks performed Q2H in the 1st 24 hrs, Q4H in the 2nd 24 hrs. No deficits noted.

Presented at 37w2d for scheduled C-section due to IURG and breech presentation.

Decision to proceed with neuraxial anesthesia.

1705cc QBL. 2nd unit of platelets transfused per surgery.

Discharged POD #2. Continued follow-up. No deficits to date.

Guidelines & Recs

SOAP Consensus Statement: The risk of spinal epidural hematoma associated with a platelet count $\geq 70,000 \times 10^6/\text{L}$ is likely to be very low in obstetric patients with thrombocytopenia secondary to gestational thrombocytopenia, immune thrombocytopenia (ITP), and hypertensive disorders of pregnancy in the absence of other risk factors.

Within oncology literature, lumbar puncture is considered reasonable with a platelet count of 20,000-50,000 $\times 10^6/\text{L}$.

The risk of spinal epidural hematoma associated with a platelet count $\leq 70,000 \times 10^6/\text{L}$ in the asymptomatic obstetric patient is unknown but may be comparable to patients with normal platelet counts according to large cohort data.

The Data

Data from Serious Complication Repository Project

*Obstetric patients, not necessarily thrombocytopenic patients

Serious Complication	Totals	Incidence	95% CI	Anesthesia Related	Incidence	95% CI
Maternal death	30	1:10,250	1:7,180, 1:15,192	0		
Cardiac arrest	43†	1:7,151	1:5,319, 1:9,615	2	1:128,398	1:35,544, 1:1,060,218
Myocardial infarction	2	1:153,748	1:42,562, 1:1,269,541	2	1:128,398	1:35,544, 1:1,060,218
Epidural abscess/meningitis	4			4	1:62,866	1:25,074, 1:235,620
Epidural hematoma	1			1	1:251,463	1:46,090, 1:10,142,861
Serious neurologic injury	27	1:11,389	1:7,828, 1:17,281	7	1:35,923	1:17,805, 1:91,244
Aspiration	0			0		
Failed intubation	10			10	1:533	1:290, 1:971
High neuraxial block	58			58‡	1:4,336	1:3,356, 1:5,587
Anaphylaxis	5§	1:61,499	1:26,353, 1:189,403	0		
Respiratory arrest in labor suite	25	1:8,455	1:5,714, 1:12,500	16	1:10,042	1:6,172, 1:16,131
Unrecognized spinal catheter	14			14	1:15,435	1:9,176, 1:25,634
Total	157‖	1:1,959	1:1,675, 1:2,294	85#	1:3,021	1:2,443, 1:3,782

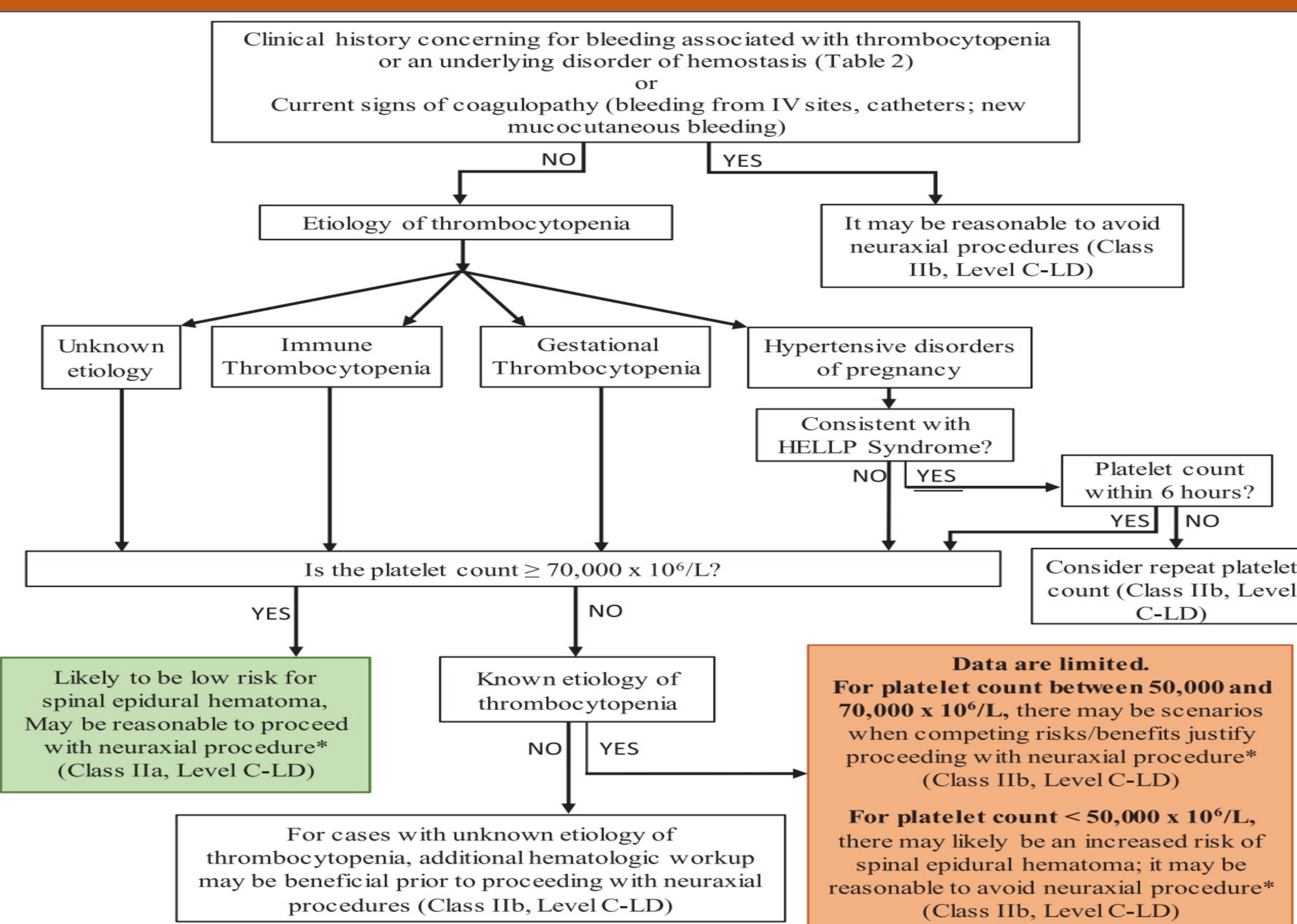
* The incidence and 95% CI are listed only once when solely related to anesthesia. † Fourteen cardiac arrests did not result in maternal death. ‡ Also includes high blocks on labor and delivery that resulted in respiratory arrests from local anesthetic administration. § The medications associated with anaphylaxis were administered by anesthesia personnel but were not anesthesia medications. ‖ There were 157 total serious complications; however, some complications are listed in more than one category. # There were 85 anesthesia-related serious complications; however, some complications are listed in more than one category.

Data from Danish National Laboratory Database: 30-day risk of Spinal Hematoma According to Type and Severity of Coagulopathy (83,711 LPs)

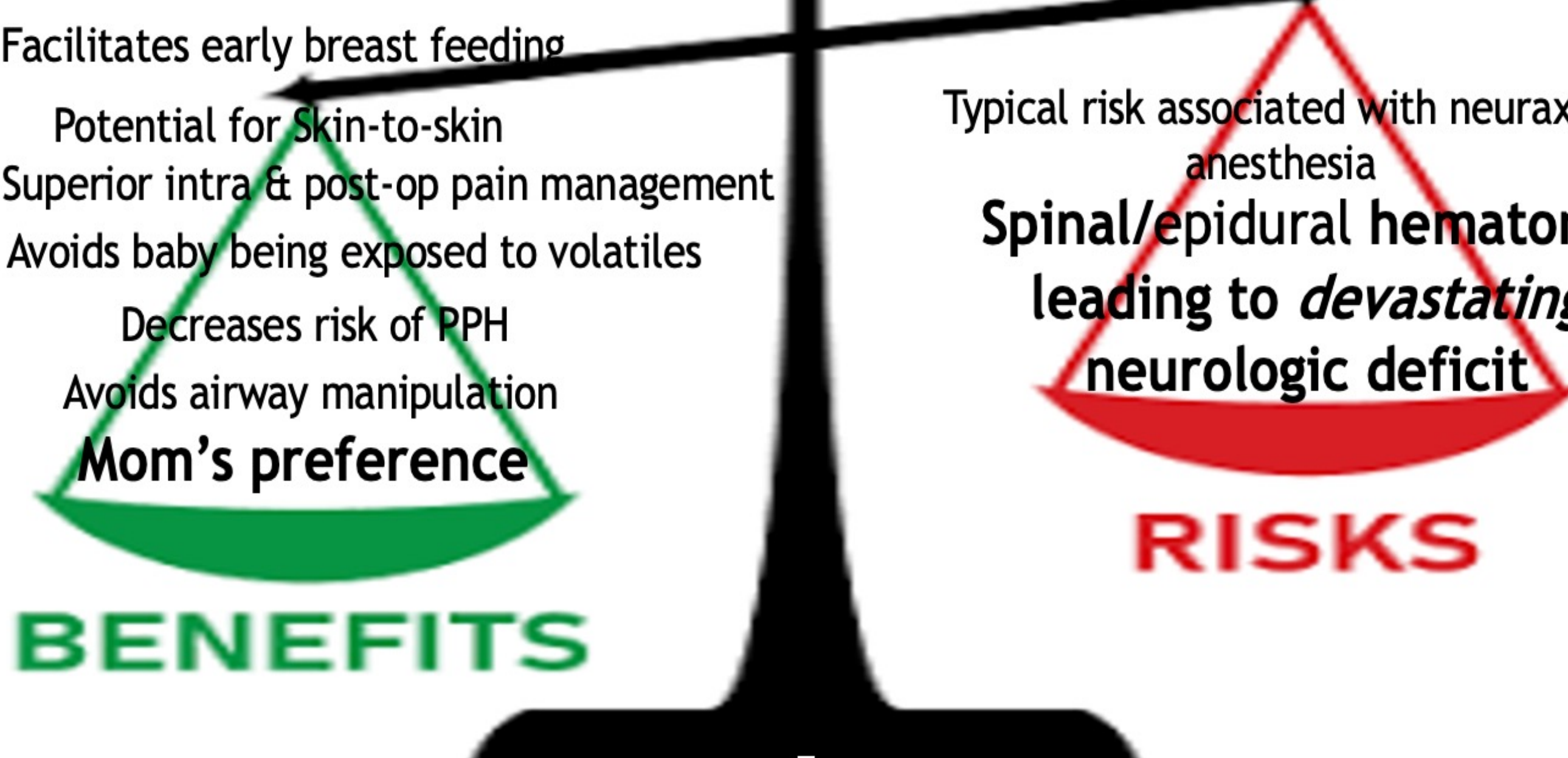
*Heterogeneous group of patients, not necessarily obstetric patients

Danish National Laboratory Database 2008-2018, 30-d risk of spinal hematoma					
	No./total	% (95% CI)	Risk difference (95% CI)	Crude HR (95% CI) ^a	Adjusted HR (95% CI) ^a
Blood platelets, 10 ⁹ /L					
≥151	103/51 132	0.20 (0.16 to 0.24)	1 [Reference]	1 [Reference]	1 [Reference]
101-150	13/3914	0.33 (0.18 to 0.57)	0.13 (-0.05 to 0.32)	1.82 (0.91 to 3.62)	1.47 (0.73 to 2.94) ^b
51-100	4/2065	0.19 (0.05 to 0.50)	-0.01 (0.20 to 0.19)		
31-50	1/789	0.13 (0.00 to 0.70)	-0.07 (0.33 to 0.18)		
11-30	2/886	0.23 (0.03 to 0.81)	0.02 (0.29 to 0.34)	1.80 (0.25 to 12.9)	1.56 (0.22 to 11.3) ^b
0-10	0/221	0 (0.00 to 1.66)			
No measurement	20/24 704	0.08 (0.05 to 0.13)	-0.12 (-0.07 to -0.17)	0.38 (0.22 to 0.65)	0.35 (0.20 to 0.60)
INR					
0-1.4	106/43 771	0.24 (0.20 to 0.29)	1 [Reference]	1 [Reference]	1 [Reference]
1.5-2.0	1/957	0.10 (0.00 to 0.58)	-0.14 (-0.35 to 0.07)		
2.1-2.5	0/224	0 (0.00 to 1.63)			
2.6-3.0	0/100	0 (0.00 to 3.62)			
3.1-4.0	0/61	0 (0.00 to 5.87)			
≥4.1	0/51	0 (0.00 to 6.98)			
No measurement	36/38 547	0.09 (0.07 to 0.13)	-0.15 (-0.09 to -0.20)	0.37 (0.24 to 0.58)	0.38 (0.24 to 0.59)
APTT (s)					
0-39	59/19 561	0.30 (0.23 to 0.39)	1 [Reference]	1 [Reference]	1 [Reference]
40-60	5/2282	0.22 (0.07 to 0.51)	-0.08 (0.29 to 0.12)	0.45 (0.11 to 1.86)	0.39 (0.09 to 1.62) ^c
≥61	0/322	0 (0.00 to 1.14)			
No measurement	79/61 546	0.13 (0.10 to 0.16)	-0.17 (-0.09 to -0.26)	0.45 (0.30 to 0.67)	0.45 (0.30 to 0.67)

Decision-Making



*Assumes patient has no additional risk factors. Clinical context and competing risks might include, but are not limited to, the presence of high-risk comorbidities or difficult airway, the need for urgent or emergent general anesthesia, or the choice of neuraxial technique (i.e. spinal versus epidural anesthetic).



References

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