

# High-Dose Heparin in Pregnant Women: Implications for Neuraxial Analgesia Safety

## Background and Hypothesis



### American Society of Regional Anesthesia Anticoagulation Guidelines 2018:

**12-hour delay** between **high-dose subcutaneous heparin** (SQH >15,000 IU/day) and **neuraxial block** placement.



### Hypothesis:

Pregnant patients receiving **high-dose SQH** can safely undergo **neuraxial analgesia (NA)** with appropriate monitoring.

### Objectives:

1. Determine **time to PTT normalization** in parturients on **high-dose SQH**.
2. Evaluate the **safety of neuraxial procedures** in this population.

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## Study Design and Methods

## Study design

- Retrospective cohort study
- Single tertiary hospital
- January 2017 - May 2022

## Population

Pregnant patients on **high-dose SQH** (>15,000 IU/day or >7,500 IU BID) at the **time of admission for delivery**.

## Data collection

Heparin dosing, serial PTTs, NA administration details, hemorrhage outcomes, potential confounders

PTT < 40 sec considered safe.  
Statistical significance:  $p < 0.05$ .

## Inclusion flowchart

Delivery encounters coded or billed for heparin administration from 2017–2022

Chart review for patients on high-dose SQH regimens at time of admission

Data abstraction

Exclusion of encounters with missing data or no NA

65 delivery encounters included

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## Results

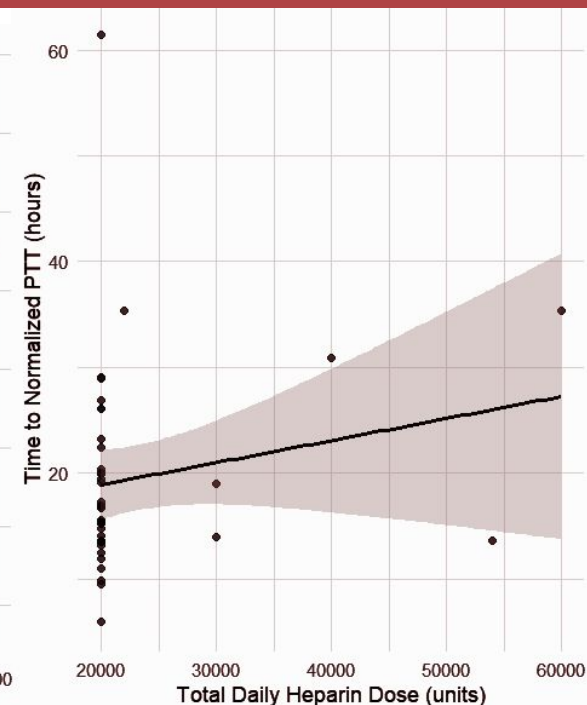
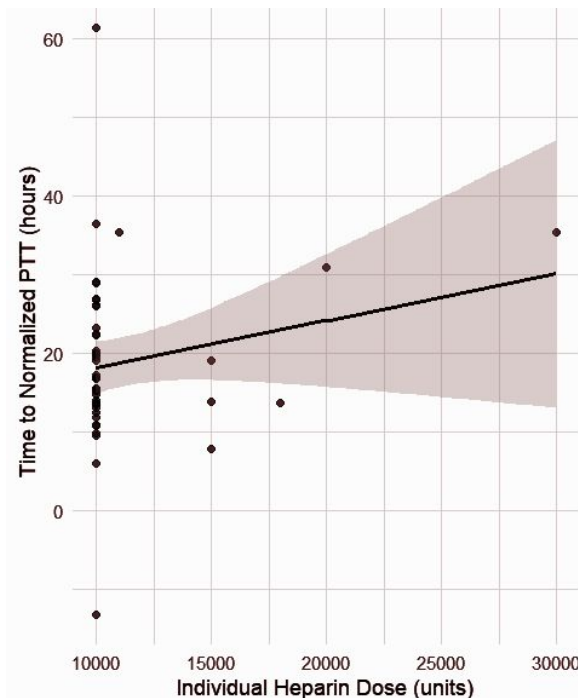
## Cohort characteristics:

Age	21 - 41 yrs	Indications	
		VTE	50
		Hypercoagulopathy	18
Nulliparous	52%	CVA	2

## Overview

56 patients had safe PTTs upon first measurement  
9 patients had prolonged PTTs upon first measurement

Variable	Mean $\pm$ SD	Range
PTT Normalization Time	26.0 $\pm$ 16.9 hrs	7.9 - 61.4 hrs
Time from SQH to Block	26.4 $\pm$ 13.0 hrs	9.0 - 61.9 hrs
% with Safe PTT at Block	65/65 (100%)	
Cervical Dilation before Block	3.9 cm	1 - 10 cm



## Key findings

- Total Daily Heparin Dose is the only statistically significant predictor ( $r = 0.19$ ,  $p = 0.038$ )
- BMI, Age, Cr, and Gestational Age are NOT significant.
- At time of NA placement, 0 patients had PTT >40s (3 patients had PTT > 35s).
- No spinal/epidural hematomas or major morbidity.

**Question:** Can pregnant patients receiving high-dose SQH safely undergo neuraxial analgesia?

## Discussion

- Most parturients on **high-dose SQH** have **safe PTT levels** upon admission for labor.
- All patients received an anesthesia consult, with **interdisciplinary care** by OB Anesthesiology, Obstetrics, and Hematology.
- **Weakly significant relationship** between total heparin dose and PTT normalization time.
- **No hematomas or severe complications** observed.
- **Scheduled induction of labor** helps improve safety.

## Limitations

- Small cohort of patients, missing some comorbidity data
- Scarcity of patients on very high doses (>20,000 IU/day)
- Infrequency and irregularity of PTT testing

## Citations

Horlocker TT, et al. *Regional Anesthesia in the Patient Receiving Antithrombotic or Thrombolytic Therapy: ASRA Guidelines, 2018.*