

## Balancing the Clot: Management of Disseminated Intravascular Coagulation with Thromboelastography during Intrapartum Cesarean Delivery



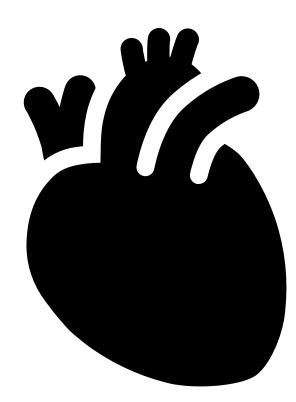
Altered mental status

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## Background

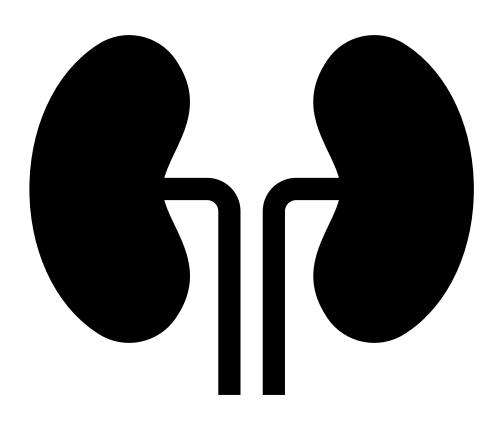
Disseminated intravascular coagulation (DIC) involves dysregulated coagulation and fibrinolysis. Incidence of DIC in pregnancy is 0.02% to 0.07%

Common causes include placental abruption, postpartum hemorrhage, pre-eclampsia, HELLP syndrome, acute fatty liver of pregnancy, amniotic fluid embolism, and sepsis.

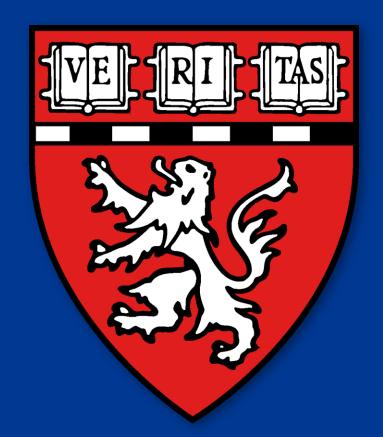


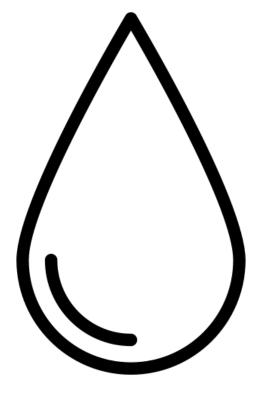
Shock, myocardial dysfunction

Oozing, petechiae or purpura fulminans



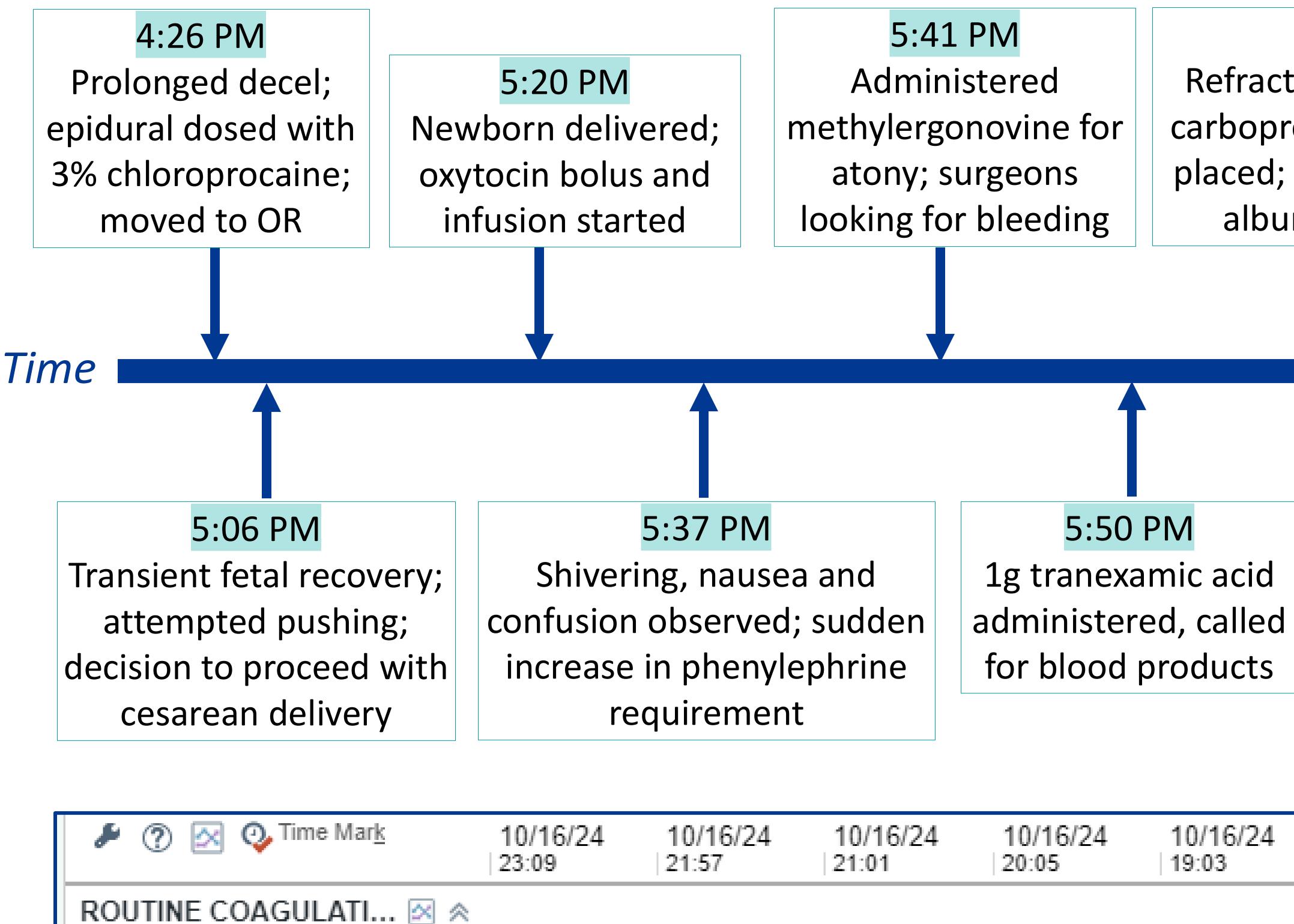
Oliguria, hematuria, cortical necrosis





Consumptive coagulopathy

### Healthy 34 y/o G2P1 who underwent an intrapartum primary cesarean delivery with epidural anesthesia



	23:09	21:57	21:01	20:05	19:03	18:0
ROUTINE COAGULATI 🖂 🖄						
PT	13.0	14.0 🔺	13.7 🔺	14.8 🔺	16.2 🔺	19.3
PT-INR	1.2 🔺	1.3 🔺	1.2 ^	1.3 🔺	1.5 🔺	1.7
PTT	33.4 🖹	33.5 🗈	35.7 🗈	43.5 🔺 🖹	42.4 🔺 🖹	42.7
Fibrinogen	241	203	199 👻	119 👻	105 👻	46 :

Abbreviations: decel (deceleration), FFP (fresh frozen plasma); GA (general anesthesia); ICU (intravenous); pRBC (packed red blood cells); OR (operating room); TEG (thromboelastography); U (units)

## Case

6:22 PM Refractory uterine atony, carboprost given and JADA placed; initiated pRBC and albumin transfusion

6:55 PM

Conversion to GA; additional access and A-line placed; labs sent and TEG analyzed

7:02 PM

6:42 PM Lateral uterine extension identified; noted oozing at IV and surgical sites; administered fibrinogen concentrate, FFP

10/16/24 ID: 30211544 01CM Citrated K, RT, FF hemorrhage ).3 🔺 . . .7 🔺 🗈 ¥ 🖹

11:43 PM Transferred to the surgical ICU intubated and sedated for further supportive care.

7:44 PM

Continued TEG-guided resuscitation with 6U pRBC, 2U platelets, 3U FFP, 7g fibrinogen concentrate. Improved surgical hemostasis and clinical stability seen

VH LLT 1 er1	ID: 30211544						10/16/2024 7:44 PM						
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СК			C	RT				TIM.	(	CFF			
50 50 40													
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### Treatment

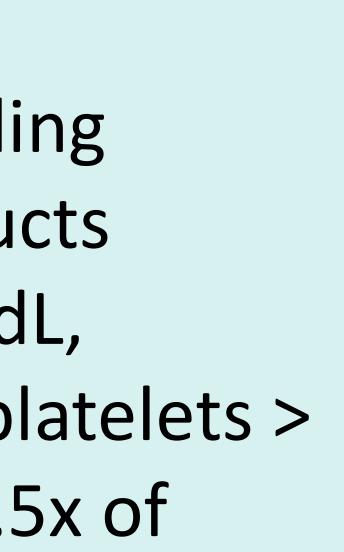
- Treat underlying cause
- Resuscitate actively bleeding patients with blood products
- Target hemoglobin > 7 g/dL, fibrinogen > 200 mg/dL, platelets > 50,000 K/ $\mu$ L, PT / PTT < 1.5x of control
- Avoid hypothermia, acidosis

### Thromboelastography can be a powerful tool for guiding early, targeted resuscitation.

Targeted resuscitation may decrease maternal morbidity by improving hemostasis and attenuating end-organ damage.

Brigham and Women's Hospital **Founding Member, Mass General Brigham** 

## Discussion



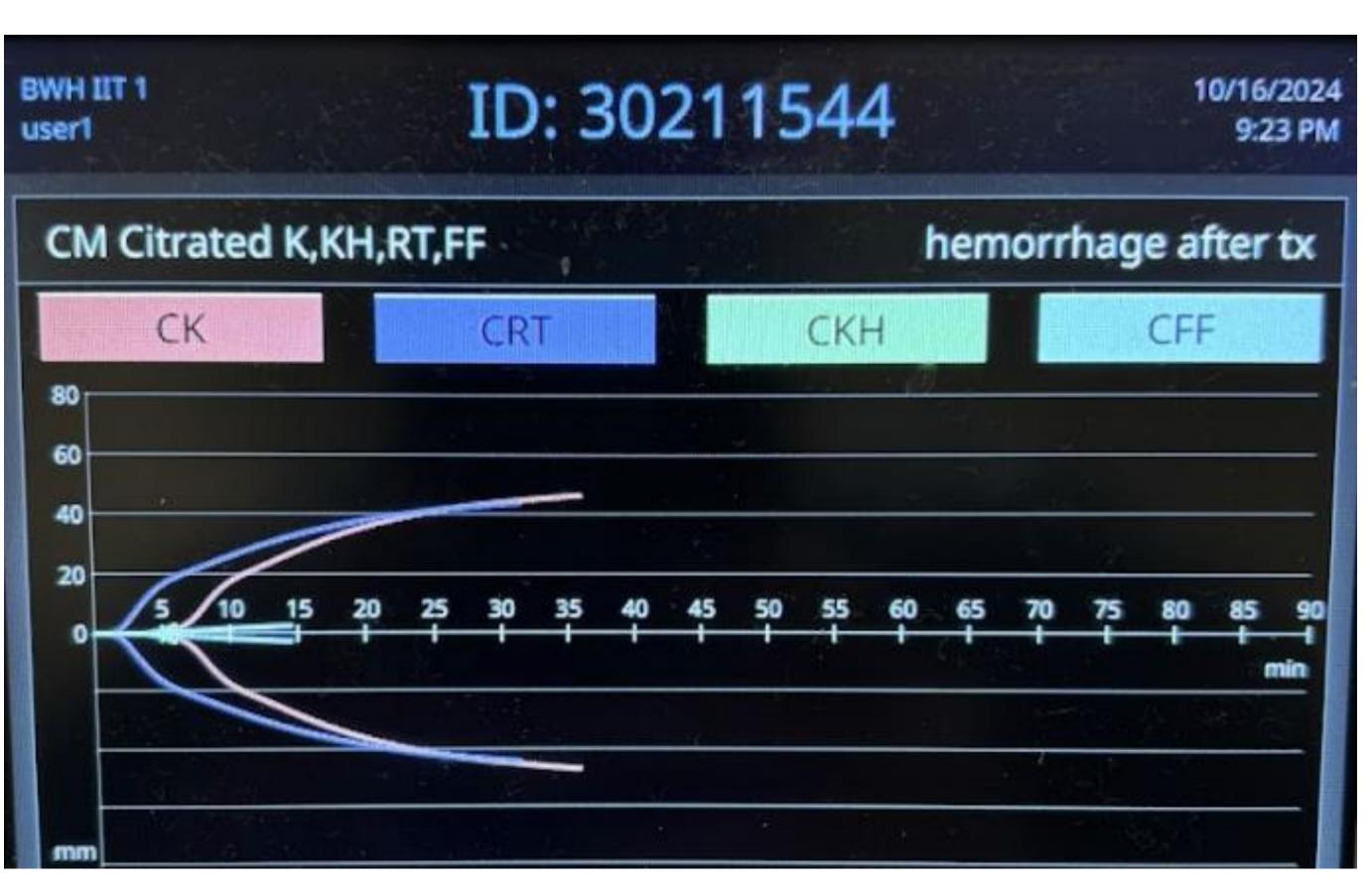


Figure: TEG measurements after initial resuscitation

# Conclusion

### Newer generation multichannel cartridges are easy to use and reliable.

### Laboratory Findings

CBC, coagulation tests should be sent early and regularly but may take time to result

Flat citrated functional fibrinogen level within ten minutes led to aggressive fibrinogen replacement.

