



The Effect of Early Fibrinogen Correction on Obstetric Hemorrhage Outcomes

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Introduction

- Massive Obstetric hemorrhage (MOH) is blood loss > 1L or any bleeding with signs of shock.
- MOH is a leading cause of mortality (2% - WHO, 2017) & morbidity including postpartum hysterectomy, organ failure, and coagulopathy including hypofibrinogenemia.
- Fibrinogen concentrate is relatively new intervention, implicated in massive transfusion protocols.
- Objective: To evaluates the effectiveness of early fibrinogen concentrate administration on maternal outcomes.

Methods

- It is a retrospective descriptive study.
- We collected the data 381 patients who experienced MOH, irrespective of the mode of delivery between 2016 and 2024.
- Patients received fibrinogen concentrate (n= 208) vs patients who did not receive fibrinogen concentrate (n= 183).
- Exclusion criteria included pre-existing bleeding disorders and anticoagulant therapy.
- Data from medical records were assessed for the following outcomes: hysterectomy rates, ICU admissions, hospital length of stay, and amount of blood transfusion.
- Ethical approval was granted by the Ministry of Health in Kuwait.

Results

- We used Statistical Package for the Social Sciences (SPSS) for data analysis.
- We found that fibrinogen administration was associated with an increased likelihood of blood transfusion (figure 1) and a higher rate of hysterectomy (figure 2) with both of statistical significance (p-value < 0.05%) than in patients who did receive fibrinogen concentrate.
- However, we did not observe a significant association between fibrinogen use and the length of ICU stay (figure 3).

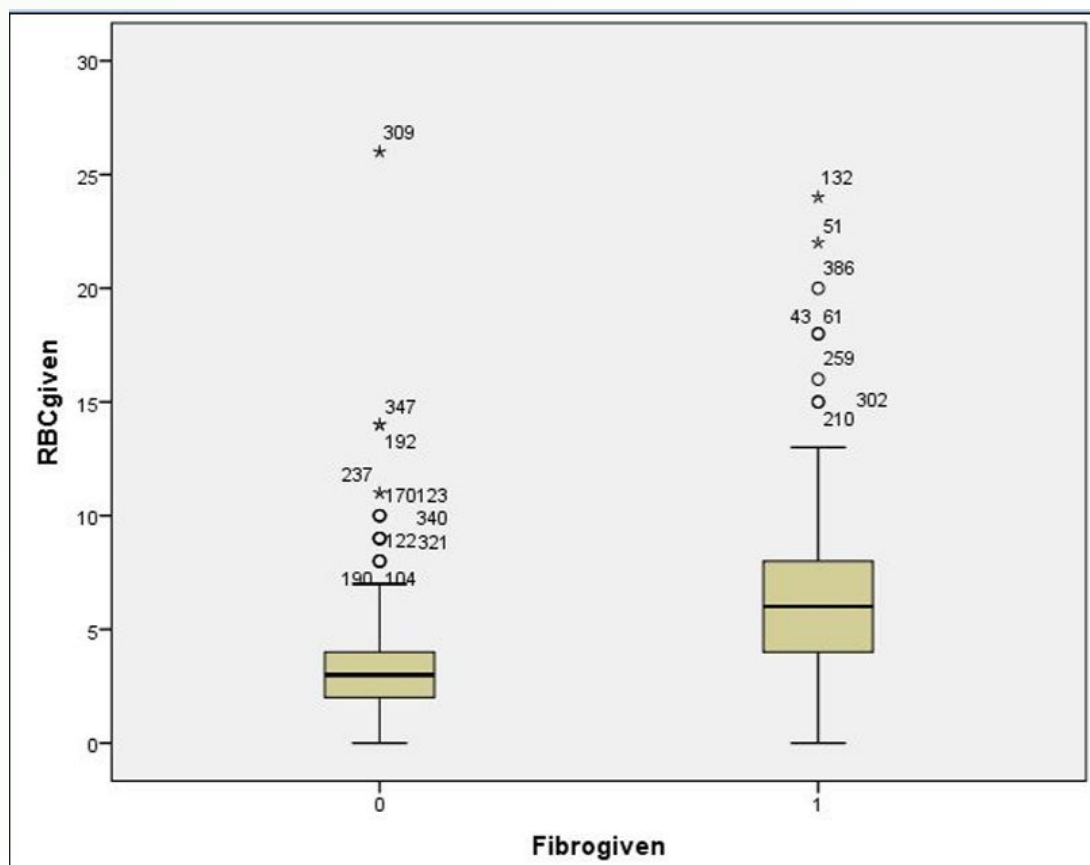


Figure (1): Average RBC units given per patient who received fibrinogen (1) vs those who did not receive it (0).

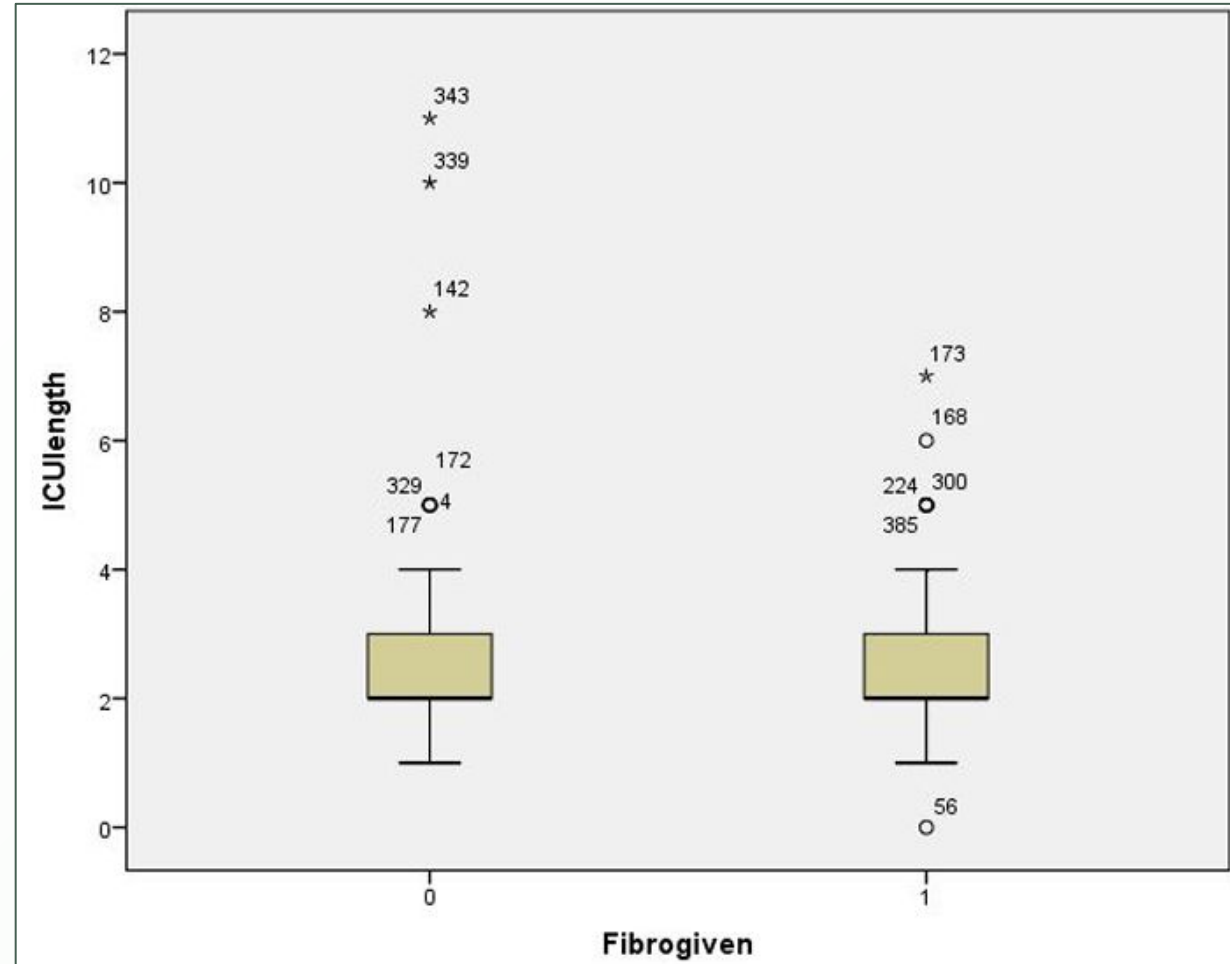


Figure 3: Average ICU length of stay in patients who received fibrinogen (1) and those who did not (0).

Hysterectomy * Fibrinogen Crosstabulation					
		Fibrinogen		Total	
		0	1		
Hysterectomy	0	Count	156	108	264
		% within Fibrinogen	75.0%	59.0%	67.5%
	1	Count	52	75	127
		% within Fibrinogen	25.0%	41.0%	32.5%
Total		Count	208	183	391
		% within Fibrinogen	100.0%	100.0%	100.0%

Figure (2): Rate of hysterectomy in patients who received fibrinogen (1) and those who did not (0).

Discussion

- One key limitation in interpreting these findings is the potential for confounding by indication; patients with more severe hemorrhage were more likely to receive fibrinogen as part of a massive transfusion protocol.
- Also, there was limited data collection about the early administration of fibrinogen as a possible prophylactic measure in the management of obstetric hemorrhagic shock, so further studies needed in this regard.

Conclusion

- Obstetric hemorrhage remains a significant clinical concern. As with all forms of bleeding, proactive prevention strategies are essential. Fibrinogen concentrate has a potential intervention to reduce the risk of hemorrhage, if given early.
- Need to collect data about the timing of fibrinogen concentrate administration, starting from 2025.

References

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