

Association of the 0–10 Uterine Tone Score with Uterotonic Administration in Cesarean Delivery



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Introduction

- There is a 6% rate of uterine atony in primary cesarean deliveries (CD)
- No universal, objective measure exists to describe uterine contractile tone¹
- The 0-10 numeric rating scale of uterine tone or ‘uterine tone score’ (UTS): good to excellent interrater reliability and good interrater agreement but its clinical interpretation is unknown²

Objectives

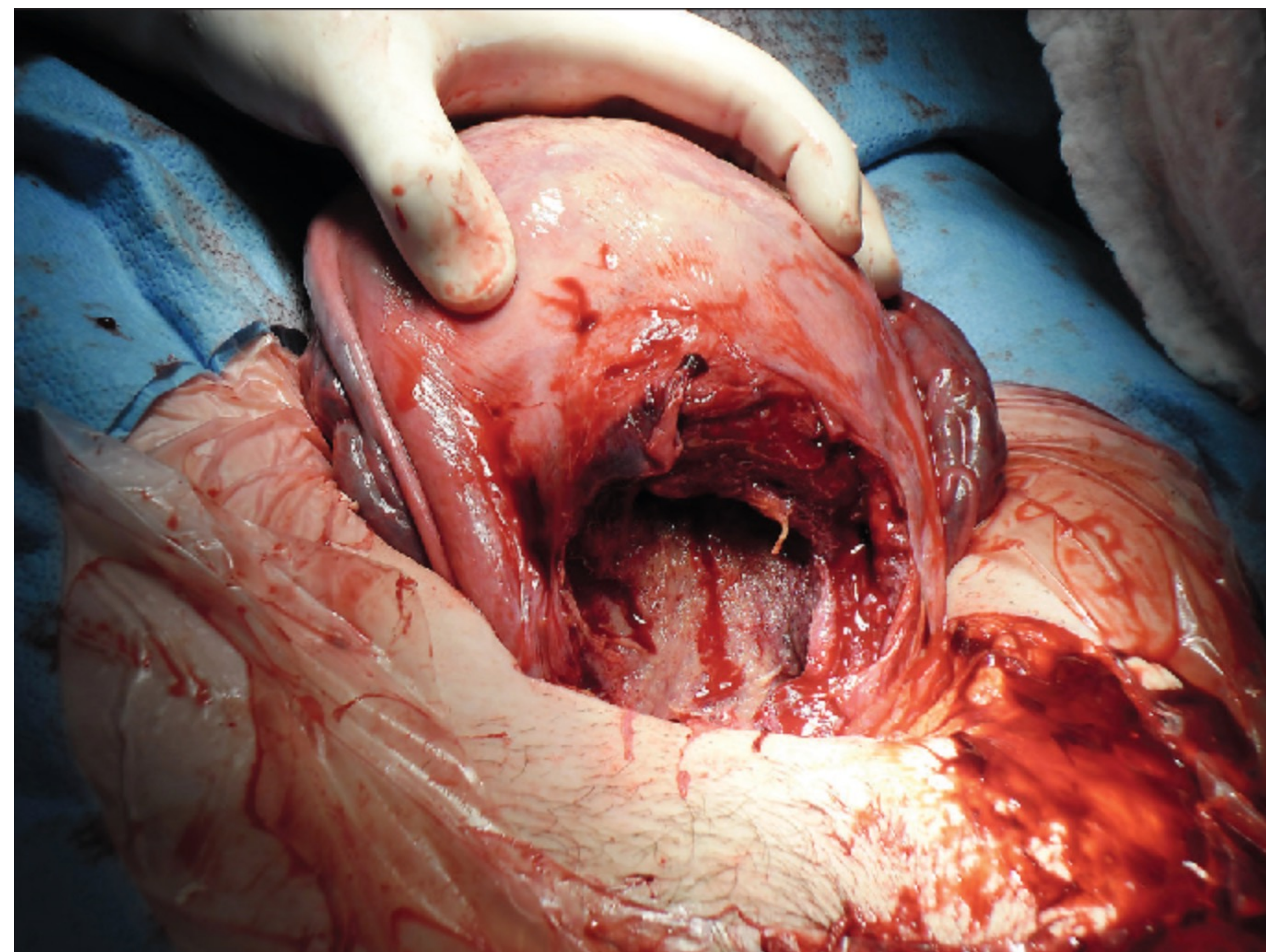
1. Investigate the association between the UTS and postpartum uterine tone in CD
2. Determine the UTS most predictive of inadequate uterine tone at 3 time points

Study Design

- 100 patient records reviewed
 - UTS from 0-10 at 0, 3 and 10 minutes post-placental delivery
- Escalation in oxytocin dose *or* second-line uterotonic drug administration = 'inadequate tone'
 - Logistic regression model and ROC (receiver operating characteristic) curves

Results

- 13 records excluded (incomplete data)
- 27/87 patients → increase in oxytocin
- 13/87 patients → 2nd line uterotonic *and* increase in oxytocin
- Mean UTS (SD):
 - 6.7 (1.8) at 0 mins
 - 7.1 (1.8) at 3 mins
 - 8 (1.7) at 10 mins

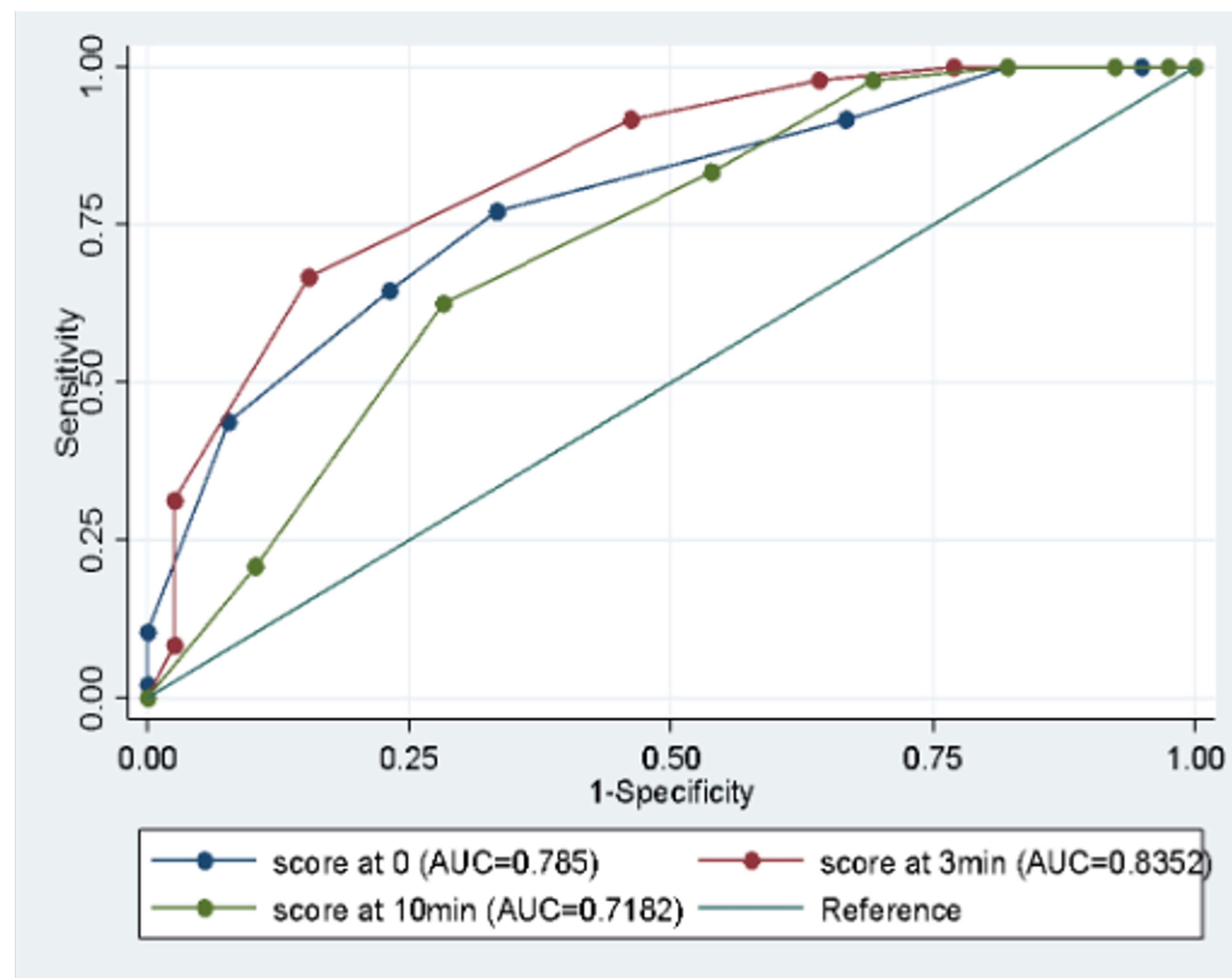


Xiao et al. JOGC May 2014



https://en.wikipedia.org/wiki/Uterine_atony

ROC Curves for Uterine Tone Score



AUC 0 vs 3 min; 0 vs 10 mins; 3 vs 10 mins: $p > 0.05$

Results cont'd

- OR (95% CI) for UTS to predict inadequate tone:
 - 0.5 (0.36, 0.69) at 0 mins ($p < 0.0001$),
 - 0.34 (0.21, 0.56) at 3 mins ($p < 0.0001$), and
 - 0.52 (0.36, 0.75) at 10 mins ($p < 0.0001$)
- **Cut-point scores for inadequate tone were 5, 7 and 8**
 - AUC= 0.78 at 0 mins,
 - AUC= 0.84 at 3 mins, and
 - AUC= 0.72 at 10 mins

Conclusion

- 0-10 UTS is associated with adequacy of uterine tone in CD
- UTS has very good discriminatory power at all time points
- Further study needed to define the utility of the UTS in guiding uterine atony management



References

1. Rouse et al. Am J Obstet Gynecol 2005
2. Cole et al. Am J Obstet Gynecol MFM 2021