

Prolonged Monitoring After Decelerations on Outpatient Non-stress Tests: How Long is Enough?

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ABSTRACT

OBJECTIVE : To determine the appropriate duration of prolonged monitoring following decelerations noted on outpatient non-stress test (NST).

STUDY DESIGN: Retrospective cohort study involving women with singleton pregnancy undergoing prolonged monitoring following decelerations (variable, late or prolonged) on outpatient NST. Total duration of monitoring (TM), time to achieve reactivity (TR) and continued duration of monitoring once reactivity achieved were recorded (CM). Reactivity was defined as per ACOG criteria (Practice Bulletin #106). The primary outcome was delivery for non-reassuring fetal status (NRFS). The secondary outcome was a 5 minute Apgar<7. Outcomes were compared between differing durations of TM, TR and CM.

RESULTS : 34 patients met inclusion criteria. Median gestational age was 36 weeks (34-42 weeks). The range of TM was 39-5760 min, TR range was 2-1140 min and the range of CM was 0-5461 min. TM was not associated with either delivery secondary to NRFS (p=.40) or 5 min Apgar<7 (p=.46). Similarly, TR was not found to be associated with either outcome (p=0.18, p= 0.57). CM was not found to be significantly associated with delivery secondary to NRFS and was not associated with the 5 min Apgar score <7 (Table 2).

CONCLUSION: Prolonged monitoring beyond 120 min is not associated with increased rate of delivery secondary to NRFS or worse neonatal outcome measured by the 5 minute Apgar score. Monitoring after a deceleration on outpatient NST may be limited to less than 120 minutes. Larger studies are needed to confirm this finding.

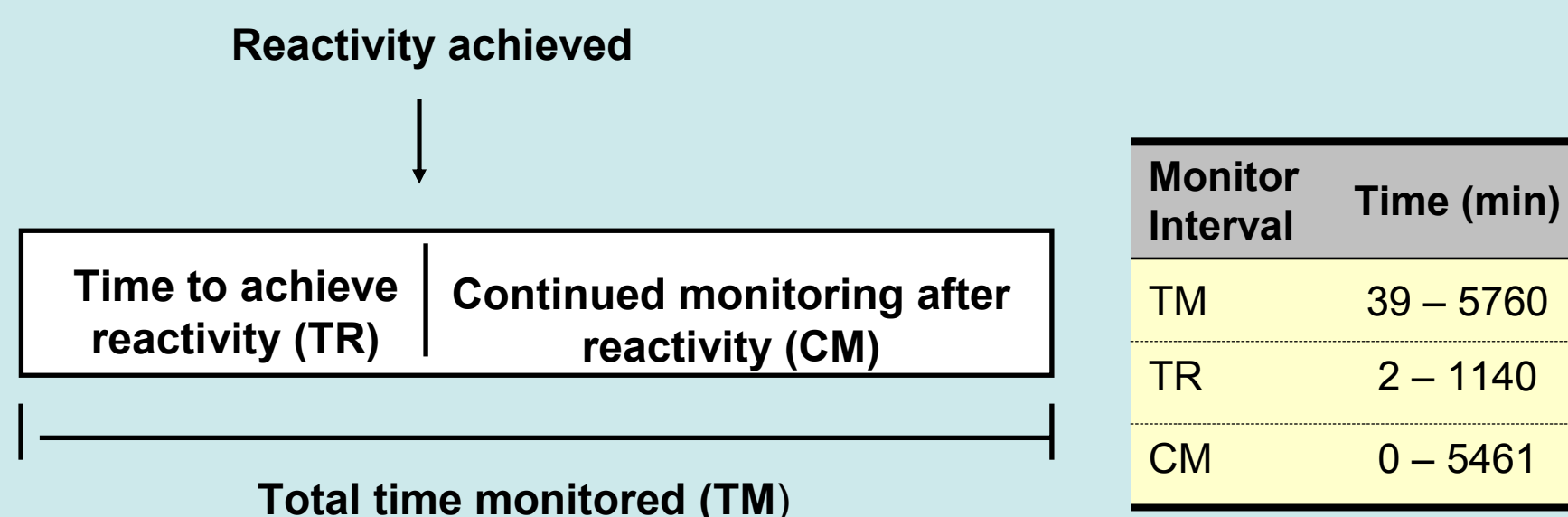
BACKGROUND

- The non-stress test (NST) is the most widely used method to assess fetal well being.
- Decelerations are not uncommon on NSTs and with an incidence up to 18% their significance is difficult to interpret (Dawes 1982).
- Prolonged monitoring following a deceleration on NST is a common approach to further assess fetal well being.
- However, there is no consensus on how long monitoring following a deceleration should be continued.
- Our objective was to determine the appropriate duration of prolonged monitoring following decelerations noted on outpatient non-stress test (NST).**

MATERIALS & METHODS

- Retrospective cohort study of women with singleton gestations undergoing prolonged monitoring on Labor and Delivery following decelerations on outpatient NST.
- Total duration of monitoring (TM), time to achieve reactivity (TR) and continued duration of monitoring once reactivity achieved (CM) were recorded (**Figure 1**).
- Eventual delivery for non-reassuring fetal status (NRFS) and 5 minute Apgar<7 were compared between differing durations of TM, TR and CM, with 120 minutes chosen as a point of comparison for CM.

Figure 1: Time periods measured and ranges



RESULTS

- 34 patients met inclusion criteria (**Table 1**).
- 50% patients were eventually delivered secondary to NRFS. 14% had a 5 min Apgar <7.
- TM was not associated with either delivery secondary to NRFS (p=0.40) or 5 min Apgar <7 (p=0.46).**
- TR was not associated with either outcome (p=0.18, p=0.57)**
- CM was not significantly associated with either delivery secondary to NRFS (p=.16) or 5 min Apgar <7 (p=.53) (Table 2).**

Table 1: Demographics

	CM ≤120min N=16	CM >120min N=18	p
Mean Age (years)±SD	31.5 ± 8	32.5 ± 7	0.69
Multiparous	10 (62%)	10 (55%)	0.68
Mean Gestational Age (weeks) ±SD	36.8 ± 2.9	35.2 ± 3.0	0.12
Deceleration leading to prolonged monitoring:			
Variable	6	3	0.24
Late	6	6	
Prolonged	4	9	

Table 2: Delivery Outcomes

Outcome	CM ≤ 120 min N=16	CM >120 min N=18	p
Delivery due to NRFS	6 (38%)	11 (61%)	.16
5 min Apgar <7	3 (18%)	2 (11%)	.53

CONCLUSIONS:

- Additional monitoring beyond 120 minutes following a deceleration on outpatient NST did not change delivery outcomes.**
- Monitoring after a deceleration on outpatient NST may be limited to ≤120 minutes once reactivity is achieved.**
- Larger studies are needed to determine the optimal length of monitoring after a deceleration on NST and if monitoring is indicated once reactivity is achieved.