

OBTAINING A REFERENCE RANGE FOR ROTATIONAL THROMBOELASTOMETRY (ROTEM) IN THE OBSTETRIC POPULATION AT NORTHWESTERN MEMORIAL HOSPITAL (NMH). A PROSPECTIVE SINGLE-CENTER STUDY.

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Background

- ROTEM can rapidly assess coagulation for prompt identification/treatment of PPH.
- Effective utilization of ROTEM in the obstetric population requires unique reference ranges.

Aim 1: Create a unique ROTEM reference range for parturients at NMH.

Aim 2: Compare values of walked versus tubed ROTEM samples.

Methods

- 40 parturients recruited: 20 planned vaginal deliveries, 20 planned Cesarean deliveries.
- Two 3-mL blood samples drawn from each parturient:
 - One sample walked to main lab via study personnel.
 - One sample tubed to main lab via pneumatic system.

Table 1: Current Non-Pregnant ROTEM Ranges vs. New Parturient ROTEM Ranges

	Current ROTEM Reference Range	Tubed Range	Walked Range
EXTEM			
CT (s)	43-82	47-68	46-71
CFT (s)	48-127	50-111	48-101
α (degrees)	65-80	71-80	71-80
A10 (mm)	48-64	53-70	56-72
A20 (mm)	50-70	62-74	63-76
MCF (mm)	50-70	65-76	65-77
INTEM			
CT (s)	122-208	98-209	121-201
CFT (s)	45-110	44-89	41-87
α (degrees)	70-81	73-81	73-82
A10 (mm)	48-64	52-68	54-72
A20 (mm)	51-72	59-72	62-76
MCF (mm)	51-72	61-74	64-77
FIBTEM			
A10 (mm)	7-24	16-30	15-29
A20 (mm)	7-24	17-31	17-31
MCF (mm)	7-24	17-32	17-31

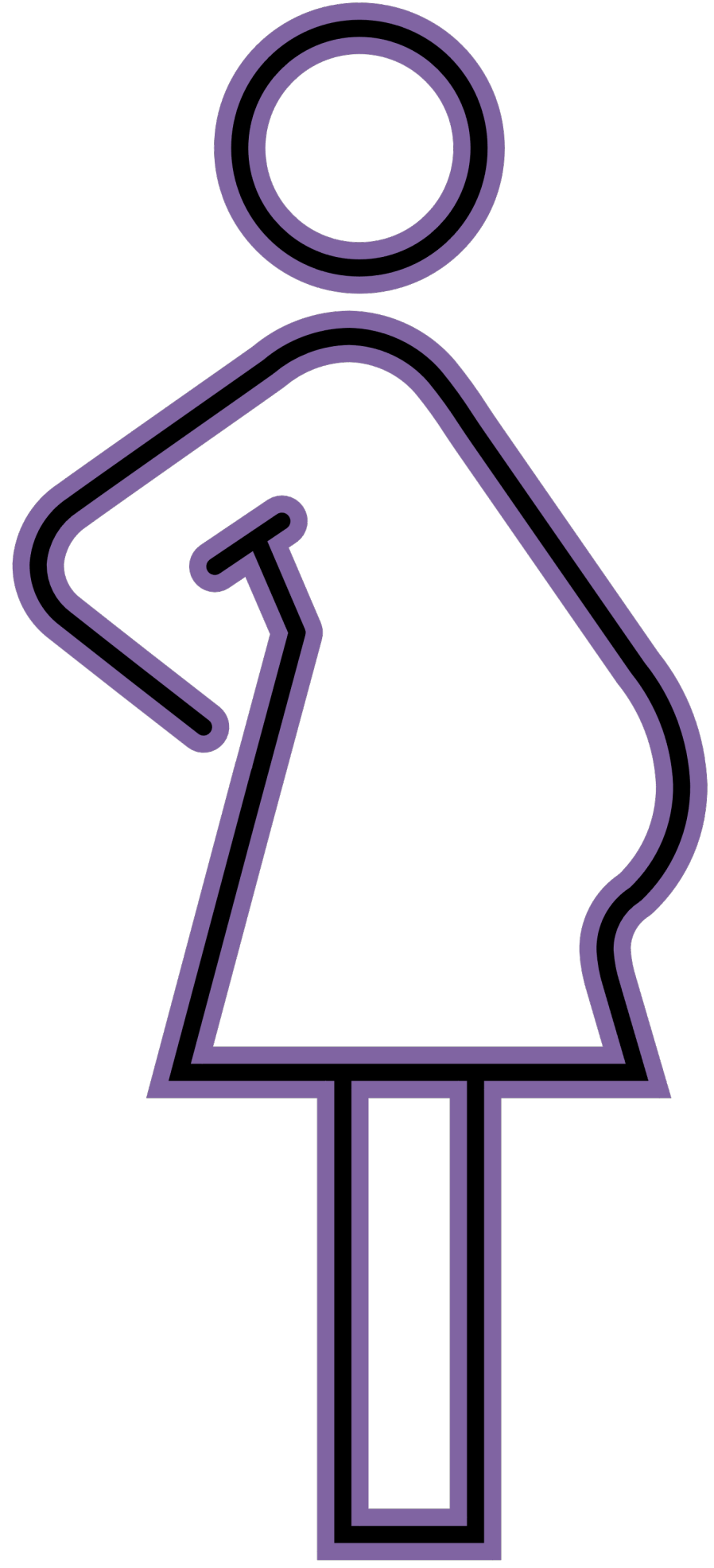
Table 2: Intra-Partum Tubed and Walked Data

	Tubed Samples n=40	Range	Walked Samples n=37	Range	T-W Variance	Variance p values
EXTEM						
CT (s)	56 [52-60]	47-68	59 [55-65]	46-71	5%	0.0281
CFT (s)	78 [68-87]	50-111	74 [67-82]	48-101	-5%	0.2811
α (degrees)	76 [74-77]	71-80	76 [73-78]	71-80	0%	0.826
A10 (mm)	61 [58-64]	53-70	62 [60-64]	56-72	2%	0.2498
A20 (mm)	68 [66-71]	62-74	69 [66-71]	63-76	1%	0.2789
MCF (mm)	70 [69-72]	65-76	71 [69-73]	65-77	1%	0.3415
INTEM						
CT (s)	153 [145-162]	98-209	169 [155-185]	121-201	9%	0.0079
CFT (s)	67 [59-75]	44-89	63 [55-68]	41-87	-7%	0.121
α (degrees)	77 [76-78]	73-81	77 [76-79]	73-82	0%	0.5617
A10 (mm)	60 [58-62]	52-68	62 [59-64]	54-72	3%	0.1064
A20 (mm)	67 [65-68]	59-72	68 [66-70]	62-76	2%	0.147
MCF (mm)	68 [66-70]	61-74	69 [67-70]	64-77	2%	0.1551
FIBTEM						
A10 (mm)	22 [19-24]	16-30	22 [19-24]	15-29	-1%	0.8252
A20 (mm)	23 [21-25]	17-31	23 [21-26]	17-31	-1%	0.8828
MCF (mm)	24 [21-27]	17-32	24 [21-26]	17-31	-1%	0.709

Data presented as median (interquartile range, IQR)

T= Tubed samples. W= Walked samples.

Discussion



- ROTEM reference values are unique in the full-term parturient.
- The pneumatic system has been validated as resourceful method to transport ROTEM samples to laboratories.

