

Appendix 1. Secondary Endpoint Definitions

Endpoint	Definition
Stillbirth	A baby born with no signs of life at or after 28 weeks' gestation.
Livebirth	Birth of at least one newborn that exhibits any sign of life, irrespective of the duration of gestation.
Hypertensive disorder	Diagnosed after 20 weeks' gestation; systolic blood pressure ≥ 140 mmHg or diastolic pressure ≥ 90 mmHg on two occasions, two hours apart, or severely elevated single blood pressure measurement requiring antihypertensive medication.
Eclampsia	The occurrence of generalized seizures in women with pre-eclampsia, provided that the tonic-clonic seizures are not attributable to other causes (e.g. epilepsy).
HELLP syndrome	Elevated liver enzyme levels (aspartate aminotransferase ≥ 100 U/L), thrombocytopenia (platelet count $< 100,000/\text{mm}^3$), elevated serum creatinine level (≥ 1.5 mg/dL) and/or hemolysis (hemoglobin < 10 g/dL).
Perinatal death	Death from 24 weeks' gestation to 4 weeks after birth.
Bronchopulmonary dysplasia	Babies born before 32 weeks: need for $> 30\%$ oxygen, with or without positive pressure ventilation or continuous positive pressure at 36-week postmenstrual age, or discharge (whichever comes first). Babies born after 32 weeks: need for $> 30\%$ oxygen with or without positive pressure ventilation or

	continuous positive pressure at 56 days postnatal age, or discharge (whichever comes first)
Intraventricular hemorrhage	Stage IIB or worse, diagnosed by repeated neonatal cranial ultrasound by the neonatologist according to the guidelines on neuro-imaging described by de Vries et al., 1992
Respiratory distress syndrome	The presence of tachypnoea >60/minute, sternal recession and expiratory grunting, need for supplemental oxygen, and a radiological picture of diffuse reticulogranular shadowing with an air bronchogram (Hjalmarson, 1981).
Necrotizing enterocolitis	>stage 1, diagnosed according to Bell, 1978
Neonatal sepsis	If prior to or at 72 hours of life the infant had an infection marked by positive blood, CSF, or urine (catheterized or suprapubic) cultures with or without suspicious clinical findings of infection on physical examination.

Appendix 2. Data on Three Patients Lost to Follow-up

	Patient 1	Patient 2	Patient 3
Reason for lost to follow up	Lost contact	Lost contact	Lost contact
Allocated group	Pessary	Pessary	Progesterone
Cervical length at randomization (mm)	28	18	26
Gestational age at randomization (week)	16	16	16
Gestational age at last visit (week)	19.5	33	34
Maternal status at last visit	Normal	Normal	Normal
Fetal status at last visit	Normal	Normal	Normal
Any adverse event at last visit	No	No	No

Appendix 3. Additional Pregnancy Outcomes in the Overall Study Population

Outcomes	Pessary (n=148)	Progesterone (n=149)	Relative Risk (95% CI)	p value
Onset of labour				
Spontaneous	82 (55.4)	95 (63.8)	-	
Induction	0 (0)	0 (0)	-	
Elective Cesarean section	66 (44.6)	54 (36.2)	-	
Mode of delivery				
Vaginal	21 (14.2)	25 (16.8)		
Cesarean section	127 (85.8)	124 (83.2)		
Elective	66 (44.6)	54 (36.2)		
Suspected fetal distress	14 (11)	17 (13.8)		
Non progressive labour	47 (37)	53 (42.7)		
Livebirth	143 (96.6)	144 (96.6)	1.00 (0.96–1.04)	0.99
Tocolytics	20 (13.5)	30 (20.1)	0.67 (0.40–1.13)	0.16
Length of admission for preterm				
labour (days)	15.4 ± 18.3	15.2 ± 21.4	-	0.98
Maternal morbidity				
Thromboembolic complications	0 (0)	0 (0)	-	-
Hypertensive disorder	16 (10.8)	20 (13.4)	0.81 (0.43–1.49)	0.59
Eclampsia/HELLP	1 (0.7)	3 (2)	0.34 (0.04–3.19)	0.62
Asymptomatic urinary tract				
infection treated with	14 (9.5)	12 (8.1)	1.17 (0.56–2.45)	0.69

antibiotics				
Chorioamnionitis	0 (0)	0 (0)	-	-
Genital tract infection	5 (3.4)	7 (54.7)	0.72 (0.23–2.21)	0.77
Maternal death	0 (0)	0 (0)	-	-

Values are mean \pm SD or number of patients (%).

Appendix 4. Baseline Characteristics by Study Group in Women With a Cervical

Length Below the 25th Percentile (≤ 28 mm)

Characteristics	Pessary (n=47)	Progesterone (n=35)
Age at randomization (years)	31.0 \pm 4.6	31.1 \pm 4.7
Highest completed education		
High school	15 (31.9)	12 (34.3)
University and higher	32 (68.1)	23 (65.7)
Body mass index (kg/m ²)	21.5 \pm 2.5	21.0 \pm 2.2
Nulliparous	40 (85.1)	33 (94.3)
Multiparous	7 (14.9)	2 (5.7)
Prior preterm birth	0 (0)	0 (0)
Conception		
Natural	1 (2.1)	0 (0)
Ovulation induction	3 (6.4)	2 (5.7)
In vitro fertilization	43 (91.5)	33 (94.3)
Fresh transfer	12 (27.9)	4 (12.1)
Frozen transfer	31 (72.1)	29 (87.9)
Dichorionic pregnancy	43 (91.5)	34 (97.1)
Monochorionic pregnancy	4 (8.5)	1 (2.9)
Uterine malformation	0 (0)	0 (0)
Gestational age at randomization (week)	17.7 \pm 1.6	18.0 \pm 2.0

Cervical length at randomization (mm)	25.7 ± 2.6	26.1 ± 2.6
Funnelling	7 (14.9)	2 (5.7)

Values are mean ± SD or number of patients (%).

Appendix 5. Outcomes by Study Group in Women With a Cervical Length in the 25th to 50th Percentile (29–32 mm)

Pregnancy outcomes	Pessary (n=25)	Progesterone (n=30)	Relative Risk (95% CI)	p value
Gestational age at delivery (weeks), median [range]	36.5 [35.5-37.5]	36.5 [34.5-37.5]	-	0.40
PTB <28 weeks	0 (0)	2 (6.7)	-	-
PTB <34 weeks	2 (8)	6 (20)	0.40 (0.09–1.81)	0.27
PTB <37 weeks	14 (56)	16 (53.3)	1.05 (0.65–1.70)	0.99
Perinatal outcomes	n=50	n=60		
Birthweight (g)	2439.0 ± 472.3	2263.3 ± 655.7	-	0.12
Very low birthweight	3 (6)	6 (10)	0.6 (0.14 - 2.42)	0.51
Low birthweight	21 (42)	36 (60)	0.7 (0.23 - 1.04)	0.08
5-minute Apgar score, median [range]	9 [8–9]	9 [8–9]	-	0.71
5-minute Apgar score <7	0 (0)	4 (6.7)	-	-
Congenital anomalies	0 (0)	2 (3.3)	-	-
Composite of poor perinatal outcomes	5 (10)	16 (26.7)	0.38 (0.1–0.91)	0.03
Stillbirth	0 (0)	2 (3.3)	-	-
Neonatal death	0 (0)	2 (3.3)	-	-
Bronchopulmonary	0 (0)	0 (0)	-	-

dysplasia				
RDS	5 (10)	11 (18.3)	0.55 (0.16–1.54)	0.28
Intraventricular				
haemorrhage	0 (0)	0 (0)	-	-
Necrotizing enterocolitis	1 (2)	3 (5)	0.40 (0.04–3.85)	0.62
Neonatal sepsis	2 (4)	6 (10)	0.40 (0.07–1.95)	0.29
Admission to NICU	5 (10)	14 (23.3)	0.43 (0.12–1.10)	0.08

Values are mean \pm SD or number of patients (%) unless otherwise stated.

NICU=neonatal intensive care unit. PTB=preterm birth. RDS=respiratory distress syndrome.

Appendix 6. Outcomes by Study Group in Women With a Cervical Length in the 50th to 75th Percentile (33–35 mm)

Pregnancy outcomes	Pessary (n=41)	Progesterone (n=35)	Relative Risk (95% CI)	p value
Gestational age at delivery (weeks), median [range]	37 [35.5-37.5]	36.5 [35.5-37.5]	-	0.52
PTB <28 weeks	3 (7.3)	1 (2.9)	2.56 (0.28– 23.53)	0.62
PTB <34 weeks	7 (17.1)	4 (11.4)	1.49 (0.48–4.68)	0.53
PTB <37 weeks	20 (48.8)	19 (54.3)	0.90 (0.58–1.39)	0.65
Perinatal outcomes	n=82	n=70		
Birthweight (g)	2273.9 ± 699.9	2273.6 ± 498.0	-	0.99
Very low birthweight	7 (8.5)	4 (5.7)	1.49 (0.43–5.50)	0.55
Low birthweight	40 (48.8)	42 (60)	0.81 (0.33–1.21)	0.19
5-minute Apgar score, median [range]	9 [8–9]	9 [8–9]	-	0.39
5-minute Apgar score <7	2 (2.4)	0 (0)	-	-
Congenital anomalies	1 (1.2)	0 (0)	-	-
Composite of poor perinatal outcomes	17 (20.7)	9 (12.9)	1.61 (0.74–4.27)	0.28
Stillbirth	5 (6.1)	2 (2.9)	2.13 (0.41–11.75)	0.45
Neonatal death	2 (2.4)	0 (0)	-	-

Bronchopulmonary dysplasia	0 (0)	0 (0)	-	-
RDS	11 (13.4)	4 (5.7)	2.35 (0.78–8.42)	0.17
Intraventricular haemorrhage	11 (13.4)	4 (5.7)	2.35 (0.78–8.42)	0.17
Necrotizing enterocolitis	2 (2.4)	2 (2.9)	0.85 (0.12–6.20)	0.99
Neonatal sepsis	6 (7.3)	4 (5.7)	1.28 (0.35–4.82)	0.75
Admission to NICU	12 (14.6)	7 (10)	1.46 (0.57–4.16)	0.47

Values are mean \pm SD or number of patients (%) unless otherwise stated.

NICU=neonatal intensive care unit. PTB=preterm birth. RDS=respiratory distress syndrome.

Appendix 7. Outcomes by Study Group in Women With a Cervical Length Above the 75th Percentile (36–<38 mm)

Pregnancy outcomes	Pessary (n=35)	Progesterone (n=49)	Relative Risk (95% CI)	p value
Gestational age at delivery				
(weeks), median [range]	37 [36.5-37.5]	36.5 [35.5-37.0]	-	0.76
PTB <28 weeks	2 (5.7)	0 (0)	-	-
PTB <34 weeks	5 (14.3)	7 (14.3)	1 (0.35–2.89)	0.99
PTB <37 weeks	16 (45.7)	30 (61.2)	0.75 (0.49–1.14)	0.19
Perinatal outcomes	n=70	n=98		
Birthweight (g)	2255.0 ± 753.4	2323.0 ± 548.9	-	0.50
Very low birthweight	7 (10)	3 (3.1)	3.27 (0.88–14.12)	0.10
Low birthweight	32 (45.7)	52 (53.1)	0.86 (0.40–1.38)	0.43
5-minute Apgar score, median				
[range]	9 [8–9]	9 [8–9]	-	0.54
5-minute Apgar score <7	3 (4.3)	3 (3.1)	1.4 (0.28–7.24)	0.69
Congenital anomalies	0 (0)	1 (1)	-	-
Composite of poor perinatal				
outcomes	15 (21.4)	19 (19.4)	1.11 (0.53–2.42)	0.85
Stillbirth	5 (7.1)	2 (2)	3.50 (0.70–19.61)	0.13

Neonatal death	2 (2.9)	2 (2)	1.40 (0.19–10.27)	0.99
Bronchopulmonary dysplasia	0 (0)	0 (0)	-	-
RDS	4 (5.7)	15 (15.3)	0.37 (0.11–1.06)	0.08
Intraventricular haemorrhage	0 (0)	1 (1)	-	-
Necrotizing enterocolitis	1 (1.4)	6 (6.1)	0.23 (0.03–1.89)	0.24
Neonatal sepsis	3 (4.3)	8 (8.2)	0.52 (0.13–1.97)	0.36
Admission to NICU	8 (11.4)	17 (17.3)	0.66 (0.25–1.52)	0.38

Values are mean \pm SD or number of patients (%) unless otherwise stated.

NICU=neonatal intensive care unit. PTB=preterm birth. RDS=respiratory distress syndrome.

Appendix 8. Kaplan Meier curves showing the proportion of continued pregnancies by cervical length of percentile. (A) 29–32 mm: hazard ratio (HR) 1.46, 95% confidence interval (CI) 0.83–2.57, p=0.19; (B) 33–35 mm, HR 1.13, 95% CI 0.70–1.81, p=0.62; (C) 36–<38 mm, HR 0.65, 95% CI 0.42–1.03, p=0.07.

