

SUPPLEMENTARY MATERIAL

Part 1

Table S1. Patients characteristics with obstetrics and neonatal outcomes

Type of cerclage	Cervical culture before cerclage	Cervical culture after cerclage		Gestational age during labor [weeks of gestation]	Delivery method	Amniotic fluid culture	Women symptoms of infection	Fetus/newborn complications
		Culture during pregnancy	Culture before labor					
PCC	Normal	<i>E. faecalis</i> , <i>E. coli</i> , <i>B. ovatus</i>	<i>E. faecalis</i> , <i>E. coli</i> , <i>B. ovatus</i>	16	Miscarriage	–	Elevated inflammatory markers	Miscarriage
UCC	GBS, <i>P. bivia</i> , <i>C. albicans</i>	GBS, <i>E. coli</i>	GBS, <i>E. coli</i>	25	Vaginal delivery	–	Elevated inflammatory markers	Neonatal death; congenital sepsis caused by <i>E. coli</i> , RDS, IVH III degree
UCC	<i>E. faecalis</i>	<i>E. coli</i> , <i>C. albicans</i>	Normal	28	Intrapartum caesarean section	<i>C. albicans</i>	Threatening intrauterine infection	Respiratory failure; early onset infection; IVH II degree
PCC	Normal	Normal	Normal	30	Intrapartum caesarean section	<i>E. faecalis</i>	Threatening intrauterine infection	Respiratory failure; early onset infection; IVH II degree
PCC	Normal	Normal	<i>E. coli</i>	34	Intrapartum caesarean section	Normal	Elevated inflammatory markers	–
UCC	<i>Ureoplasma spp.</i> , <i>M. hominis</i>	<i>E. faecalis</i> , <i>E. coli</i>	<i>E. coli</i>	36	Vaginal delivery	–	–	Cephalohematoma
UCC	GBS	<i>C. glabrata</i> , <i>C. albicans</i> , <i>E. faecalis</i> , <i>P. melaninogenica</i> , <i>C. koseri</i>	<i>E. coli</i>	36	Intrapartum caesarean section	Normal	–	–
PCC	<i>C. albicans</i>	<i>C. albicans</i>	<i>C. albicans</i>	37	Intrapartum caesarean section	Normal	–	–
PCC	Normal	Normal	<i>E. faecalis</i>	37	Intrapartum caesarean section	Normal	–	–
PCC	<i>C. albicans</i>	<i>E. coli</i>	Normal	37	Caesarean section	Normal	–	Mild respiratory distress
PCC	Normal	<i>E. coli</i>	Normal	37	Intrapartum caesarean section	Normal	–	–
PCC	Normal	Normal	<i>E. coli</i>	37	Vaginal delivery	–	–	–
PCC	Normal	Normal	Normal	37	Vaginal delivery	–	–	–
PCC	Normal	Normal	Normal	37	Intrapartum caesarean section	Normal	–	–
PCC	Normal	Normal	Normal	38	Vaginal delivery	–	–	–
PCC	Normal	Normal	Normal	38	Caesarean section	Normal	–	–
PCC	<i>C. parapsilosis</i> , <i>E. coli</i>	<i>E. faecalis</i> , <i>E. coli</i> , <i>P. bivia</i> , <i>Ureoplasma spp.</i> , <i>M. hominis</i> , <i>K. pneumoniae</i>	<i>E. faecalis</i> , <i>K. pneumoniae</i>	38	Intrapartum caesarean section	Normal	–	–
PCC	<i>E. faecalis</i> , <i>E. coli</i>	<i>E. coli</i>	<i>E. coli</i>	38	Vaginal delivery	–	–	–

PCC	<i>Bacteroides</i> spp., <i>E. coli</i>	<i>E. coli</i> , <i>K. pneumoniae</i> , <i>E. faecalis</i> , <i>E. cloacae</i>	<i>E. faecalis</i>	38	Vacuum extractor	–	–	Cephalohematoma
PCC	Normal	Normal	<i>E. coli</i>	38	Vaginal delivery	–	–	–
PCC	Normal	GBS	Normal	38	Vaginal delivery	–	–	Clavicle fracture
PCC	Normal	<i>P. intermedia</i> , <i>P. bivia</i> , <i>G. vaginalis</i> , GBS, <i>E. coli</i>	GBS, <i>E. coli</i>	38	Vaginal delivery	–	–	–
PCC	Normal	Normal	Normal	38	Caesarean section	Normal	–	–
PCC	Normal	Normal	Normal	38	Vaginal delivery	–	–	–
PCC	Normal	Normal	Normal	38	Caesarean section	Normal	–	–
PCC	<i>G. vaginalis</i>	Normal	<i>C. albicans</i>	39	Caesarean section	Normal	–	–
PCC	Normal	Normal	<i>K. pneumoniae</i> , <i>E. coli</i>	39	Vaginal delivery	–	–	–
PCC	Normal	Normal	Normal	39	Intrapartum caesarean section	Normal	–	–
PCC	Normal	Normal	Normal	39	Vaginal delivery	–	–	–
PCC	Normal	<i>E. coli</i>	Normal	40	Intrapartum caesarean section	Normal	–	–
PCC	Normal	<i>P. bivia</i> , <i>G. vaginalis</i>	<i>G. vaginalis</i>	40	Vaginal delivery	–	–	–
PCC	<i>C. albicans</i>	Normal	Normal	40	Vaginal delivery	–	–	Mild respiratory distress
PCC	Normal	Normal	<i>M. morganii</i> , <i>E. faecalis</i>	40	Intrapartum caesarean section	Normal	–	–
PCC	Normal	Normal	Normal	40	Vaginal delivery	–	–	–
PCC	Normal	Normal	Normal	40	Vaginal delivery	–	–	–

UCC — ultrasound-indicated cervical cerclage; PCC — prophylactic cervical cerclage; RDS — respiratory distress syndrome. IVH — intraventricular hemorrhage; *B. ovatus* — *Bacteroides ovatus*; *C. albicans* — *Candida albicans*; *C. parapsilosis* — *Candida parapsilosis*; *C. koseri* — *Citrobacter koseri*; *E. cloacae* — *Enterobacter cloacae*; *E. faecalis* — *Enterococcus faecalis*; *E. coli* — *Escherichia coli*; GBS — Group B *Streptococcus*; *G. vaginalis* — *Gardnerella vaginalis*; *K. pneumoniae* — *Klebsiella pneumoniae*; *M. hominis* — *Mycoplasma hominis*; *M. morganii* — *Morganella morganii*; *P. bivia* — *Prevotella bivia*; *P. intermedia* — *Prevotella intermedia*; *P. melaninogenica* — *Prevotella melaninogenica*

Part 2

Cervical smears methodology

Cervical smears samples were collected and cultured for aerobic and anaerobic bacteria, and fungi on the following media:

- ij Shaedler Anaerobe Agar/S.A. KV Selektive Agar (VL), incubated at $36 \pm 1^\circ\text{C}$ for 40 h,
- ij Columbia blood (Ak) agar, incubated at $36 \pm 1^\circ\text{C}$ for 15–40 h;
- ij Gardnerella agar (GV), incubated at $36 \pm 1^\circ\text{C}$ for 15–40 h;
- ij Chocolate agar with POLYVITEX (BHI), incubated at $36 \pm 1^\circ\text{C}$ for 15–40 h;
- ij MacConkey (Mc) medium, incubated at $36 \pm 1^\circ\text{C}$ for 15–40 h;
- ij StreptoB medium, incubated at $36 \pm 1^\circ\text{C}$ for 15–40 h;
- ij Sabouraud medium with chloramphenicol (SAB), incubated at $30 \pm 1^\circ\text{C}$ for 15–40 h.

The Ak and BHI media were assessed after 24 h. If a negative result was obtained, the observation was prolonged by

72 h; if a positive result was obtained, the observation was prolonged by another 96 h. ChromID ESB, ChromID VRE, ChromID MRSA, chromogenic medium for *Pseudomonas aeruginosa*, chromogenic medium for *Streptococcus aureus* and *Streptococcus saprophyticus* were used as necessary.

Smears for *Streptococcus agalactiae* were obligatory collected from vulval vestibule and anus area between 34 and 37 week of gestation. The smears were cultured on the following media: Colombia blood agar (15–40 h incubation at $36 \pm 1^\circ\text{C}$), Chrom ID StreptoB medium (15–40 h incubation at $36 \pm 1^\circ\text{C}$) and Brain Heart Infusion Broth (24–48 h incubation at $35 \pm 2^\circ\text{C}$).

The culture results were classified as non-pathogenic or, if positive, containing the name of the identified microorganisms. All of the cultures for aerobic and anaerobic bacteria, and fungi were analysed in the microbiological laboratory of the 2nd Department of Obstetrics and Gynaecology, Medical University of Warsaw. Atypical bacteria were detected by *Mycoplasma* IST 2 testing (BioMérieux).

Part 3

Well-child visits

Well-child visit in age of 6–9 weeks

1. Postnatal age:
Postconceptional age (*for children born before 37 + 0 week of gestation*):
 2. Weight*: [g]
 3. Length*: [cm]
 4. Head circumference*: [cm]
 5. Chest circumference*: [cm]
- *Assessment according to the sex-adjusted growth chart for polish population
6. Anterior fontanel: *size* Cranial sutures: *width*
 7. Medications:
 8. Screening tests assessing:
 - ij visual disorders:
 - hirschberg test
 - cover test
 - ij hearing disorders (assessment of hearing reactions and presence of hearing impairment risk factors):
 - ij congenital dysplasia of the hip:
 - ij cryptorchidism: testicles in scrotum/testicles in inguinal canal/impalpable
 9. Physical examination (pay special attention to: changes in oral cavity: Bohn's nodules, Epstein's pearls, congenital epulis, abnormalities of frenulum, lips and tongue)
 - ij skin
 - ij head
 - ij neck
 - ij eyes
 - ij ears
 - ij oral cavity/pharynx
 - ij lymph nodes
 - ij lungs
 - ij heart
 - ij abdomen
 - ij urogenital system
 - ij musculoskeletal system
 - ij nutrition status
 10. Feeding (efficacy of breast feeding, frequency and volume of meals in case of formula feeding):
 11. Neurodevelopmental assessment — examination of muscle tension and primitive reflexes, assessment of developmental milestones:
 12. Important data from parent history:
 - ij sucking difficulties
 - ij swallowing difficulties
 - ij apnea
 - ij vomiting
 - ij seizures
 - ij abnormal crying
 - ij no response to sounds

- ij other (behavior, activity, injuries, daily routine, who is a caregiver etc.)

13. Abnormalities in additional tests:

14. Recommendations:

15. Nutritional counseling, diet, vitamins:

16. Recommended consultations:

17. Recommended diagnostic tests:

Well-child visit in age of 3–4 months

1. Postnatal age:

Postconceptional age (*for children born before 37 + 0 week of gestation*):

2. Weight*: [g]

3. Length*: [cm]

4. Head circumference*: [cm]

5. Chest circumference*: [cm]

*Assessment according to the sex-adjusted growth chart for polish population

6. Anterior fontanel: *size* Cranial sutures: *width*

7. Medications:

8. Screening tests assessing:

- ij visual disorders:

- strabismus
- hirschberg test
- cover test

- ij hearing disorders (assessment of hearing reactions and presence of hearing impairment risk factors):

- ij congenital dysplasia of the hip:

- ij cryptorchidism: testicles in scrotum/testicles in inguinal canal/impalpable

9. Physical examination (pay special attention teething, abnormalities in oral cavity)

- ij skin

- ij head

- ij neck

- ij eyes

- ij ears

- ij oral cavity/pharynx

- ij lymph nodes

- ij lungs

- ij heart

- ij abdomen

- ij urogenital system

- ij musculoskeletal system

- ij nutrition status

10. Feeding (efficacy of breast feeding, frequency and volume of meals in case of formula feeding)

11. Neurodevelopmental assessment — examination of muscle tension and primitive reflexes, assessment of developmental milestones:

12. Important data from parent history

- ij sucking difficulties

- ij swallowing difficulties
 - ij abnormal stools
 - ij apnea
 - ij vomiting
 - ij seizures
 - ij no turning head towards sound
 - ij no bringing hands to the midline
 - ij other (behavior, activity, injuries, daily routine, who is a caregiver etc.)
13. Abnormalities in additional tests:
 14. Recommendations:
 15. Nutritional counseling, diet, vitamins:
 16. Recommended consultations:
 17. Recommended diagnostic tests:

Well-child visit in age of 6 months

1. Postnatal age:
Postconceptional age (*for children born before 37+0 week of gestation*):
 2. Weight*: [g]
 3. Length*: [cm]
 4. Head circumference*: [cm]
 5. Chest circumference*: [cm]
- *Assessment according to the sex-adjusted growth chart for polish population
6. Anterior fontanel: *size* Cranial sutures: *width*
 7. Medications:
 8. Screening tests assessing:
 - ij visual disorders:
 - strabismus
 - hirschberg test
 - cover test
 - ij hearing disorders (assessment of hearing reactions and presence of hearing impairment risk factors):
 - ij congenital dysplasia of the hip:
 - ij cryptorchidism: testicles in scrotum/testicles in inguinal canal/impalpable
 9. Physical examination (pay special attention to teething, abnormalities in oral cavity, eating habits, feeding and drinking during night)
 - ij skin
 - ij head
 - ij neck
 - ij eyes
 - ij ears
 - ij oral cavity/pharynx
 - ij lymph nodes
 - ij lungs
 - ij heart
 - ij abdomen
 - ij urogenital system
 - ij musculoskeletal system

- ij nutrition status
10. Feeding (efficacy of breast feeding, frequency and volume of meals in case of formula feeding, expanding the diet)
 11. Neurodevelopmental assessment — assessment of developmental milestones
 12. Important data from parent history
 - ij feeding difficulties
 - ij abnormal stools
 - ij apnea
 - ij vomiting
 - ij seizures
 - ij no reaction to bell ringing/phone/caregiver's voice
 - ij no interest in toys
 - ij no rolling-over
 - ij other (behavior, activity, injuries, daily routine, who is a caregiver etc.)
 13. Abnormalities in additional tests:
 14. Recommendations:
 15. Nutritional counseling, diet, vitamins:
 16. Recommended consultations:
 17. Recommended diagnostic tests:

Well-child visit in age of 9 months

1. Postnatal age:
Postconceptional age (*for children born before 37+0 week of gestation*):
 2. Weight*: [g]
 3. Length*: [cm]
 4. Head circumference*: [cm]
 5. Chest circumference*: [cm]
- *Assessment according to the sex-adjusted growth chart for polish population
6. Anterior fontanel: *size* Cranial sutures: *width*
 7. Medications:
 8. Screening tests assessing:
 - ij visual disorders:
 - strabismus
 - hirschberg test
 - cover test
 - ij hearing disorders (assessment of hearing reactions and presence of hearing impairment risk factors):
 - ij congenital dysplasia of the hip:
 - ij cryptorchidism: testicles in scrotum/testicles in inguinal canal/impalpable
 9. Physical examination (pay special attention to teething, abnormalities in oral cavity, eating habits, feeding and drinking during night, hygienic habits, teeth brushing with fluoride paste)
 - ij skin
 - ij head
 - ij neck

- ij eyes
- ij ears
- ij oral cavity/pharynx
- ij lymph nodes
- ij lungs
- ij heart
- ij abdomen
- ij urogenital system
- ij musculoskeletal system
- ij nutrition status
- 10. Feeding (efficacy of breast feeding, frequency and volume of meals in case of formula feeding, expanding the diet)
- 11. Neurodevelopmental assessment — assessment of developmental milestones
- 12. Important data from parent history
 - ij feeding difficulties
 - ij abnormal stools
 - ij micturition difficulties, wet diaper all the time
 - ij lack of urine stream
 - ij frequent infections
 - ij apnea
 - ij vomiting
 - ij seizures
 - ij no reaction to quiet sounds
 - ij no reduplicated babbling — repeating the same syllable (e.g. da-da-da).
 - ij stereotypic behavior (e.g. rhythmical nodding)
 - ij no rolling-over
 - ij other (behavior, activity, injuries, daily routine, who is a caregiver etc.)
- 13. Abnormalities in additional tests:
- 14. Recommendations:
- 15. Nutritional counseling, diet, vitamins:
- 16. Recommended consultations:
- 17. Recommended diagnostic tests:
- 18. Vaccinations according to immunization schedule:

Well-child visit in age of 12 months

1. Postnatal age:
Postconceptional age (for children born before 37+0 week of gestation):
 2. Weight*: [g]
 3. Length*: [cm]
 4. Head circumference*: [cm]
 5. Chest circumference*: [cm]
 6. Blood pressure*: [mmHg]
- *Assessment according to the sex-adjusted growth chart for polish population
7. Anterior fontanel: *size* Cranial sutures: *width*
 8. Medications:
 9. Screening tests assessing:

- ij visual disorders:
 - strabismus
 - hirschberg test
 - cover test
- ij hearing disorders (assessment of hearing reactions and presence of hearing impairment risk factors):
- ij congenital dysplasia of the hip:
- ij cryptorchidism: testicles in scrotum/testicles in inguinal canal/impalpable
- 10. Physical examination (pay special attention to teething, abnormalities in oral cavity, eating habits, feeding and drinking during night, hygienic habits, teeth brushing with fluoride paste)
 - ij skin
 - ij head
 - ij neck
 - ij eyes
 - ij ears
 - ij oral cavity/pharynx
 - ij lymph nodes
 - ij lungs
 - ij heart
 - ij abdomen
 - ij urogenital system
 - ij musculoskeletal system
 - ij nutrition status
- 11. Feeding (efficacy of breast feeding, frequency and volume of meals in case of formula feeding, expanding the diet, introduction of elimination diets)
- 12. Neurodevelopmental assessment — assessment of developmental milestones
- 13. Important data from parent history
 - ij feeding difficulties
 - ij abnormal stools
 - ij micturition difficulties, wet diaper all the time
 - ij lack of urine stream
 - ij frequent infections
 - ij apnea
 - ij vomiting
 - ij seizures
 - ij no reaction to quiet sounds
 - ij no reduplicated babbling — repeating the same syllable (e.g. da-da-da).
 - ij stereotypic behavior (e.g. rhythmical nodding)
 - ij no rolling-over
 - ij other (behavior, activity, injuries, daily routine, who is a caregiver etc.)
- 14. Abnormalities in additional tests:
- 15. Recommendations:
- 16. Nutritional counseling, diet, vitamins:
- 17. Recommended consultations:
- 18. Recommended diagnostic tests:

19. Ophthalmic examination:

20. Vaccinations according to the immunization schedule:

Well-child visit in age of 24 months

1. Postnatal age:

Postconceptional age (*for children born before 37+0 week of gestation*):

2. Weight*: [g]

3. Length*: [cm]

4. Head circumference*: [cm]

5. Blood pressure*: [mmHg]

6. Body mass index*: [kg/m²]

*Assessment according to the sex-adjusted growth chart for polish population

7. Anterior fontanel: *size* Cranial sutures: *width*

8. Medications:

9. Screening tests assessing:

ij visual disorders:

- strabismus
- hirschberg test
- cover test

ij hearing disorders (assessment of hearing reactions and presence of hearing impairment risk factors):

ij congenital dysplasia of the hip:

ij cryptorchidism: testicles in scrotum/testicles in inguinal canal/impalpable

10. Physical examination (pay special attention to teething, abnormalities in oral cavity, eating habits, feeding and drinking during night, hygienic habits, teeth brushing with fluoride paste)

ij skin

ij head

ij neck

ij eyes

ij ears

ij oral cavity/pharynx

ij lymph nodes

ij lungs

ij heart

ij abdomen

ij urogenital system

ij musculoskeletal system

ij nutrition status

11. Feeding (frequency and volume of meals and drinks, introduction of elimination diets)

Important data from parent history

ij feeding difficulties

ij abnormal stools

ij micturition difficulties, using diapers

ij lack of urine stream

ij frequent infections

ij apnea

ij vomiting

ij seizures

ij no age-appropriate speech development: two-word sentences/speaking in third person

ij no age-appropriate understanding of speech: showing parts of body/understanding simple instructions

ij behavior disorders

ij sleep disorders

ij no first steps after the age of 15 months/no going up the stairs holding a rail

ij other (behavior, activity, injuries, daily routine, who is a caregiver etc.)

12. Abnormalities in additional tests:

13. Recommendations:

14. Nutritional counseling, diet, vitamins:

15. Recommended consultations:

16. Recommended diagnostic tests:

17. Vaccinations according to the immunization schedule: