# A two steps protocol for the management of women with a mid-trimester short cervix

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## Objective

Women with a short cervix in the second trimester of pregnancy are at a higher risk of giving preterm birth. All women having a second trimester anomaly scan in our Department also undergo an ultrasonographic cervical assessment as a screening for prematurity. Moreover, women with a short cervix are referred to our tertiary referral center for further management. The aim of this study was to examine the results following the application of a two-step management protocol of women with a mid-trimester short cervical length.

## Methods

First Department of Obstetrics and Gynaecology is a tertiary referral Centre for high risk pregnancies. During the last 5 years we implemented a different protocol for the management of women with a short cervix in the second trimester of pregnancy. All women with a cervical length ≤ 25 mm are given vaginal progesterone (either 200 mg of micronized progesterone, or 80 mg of progesterone gel) every night and are followed-up with serial transvaginal scans to ass further cervical length changes. To those whose the cervix shortens <15 mm until 26 weeks, we offer cervical cerclage, based on the assumption that cervical changes are no more reversible by the progesterone. All women signed an informed consent form before the procedure. It has been done under epidural anaesthesia with a modified McDonald technique. Following cerclage women are given antibiotics (cefuroxime 750 mg iv every 8 hours and metronidazole 500 mg every 12 hours for two days, followed by roxithromycine 300 mg per os, for 8 days), as well as rectal suppositories of diclofenac 50 mg or ibuprofen 500 mg (two doses). All women had been hospitalized for at least two days and the white blood count (WBC) and C-reactive protein (CRP) levels had been checked. They had been discharged home with instruction to rest and avoid intercourse. All women having undergone cerclage continued the use of vaginal progesterone. Ultrasound examination had been performed 48 hours postoperatively to assess fetal wellbeing and confirm the correct placement of the stitch. The primary efficacy variables were preterm delivery rate (<34 and 32 weeks) and pregnancy prolongation. The secondary outcomes were birthweight, neonatal intensive care unit admission, intubation, use of CPAP and neonatal death.

## Results

101 women were found to have a cervical length ≤ 25 mm. The mean cervical length was 13 mm (range 0-25 mm). 25 out of 101 were managed with cervical cerclage because of a cervical length <15 mm at the initial evaluation, while 76 received vaginal progesterone. Of the latter, 37 women had a cervix <15 mm during the follow-up visits and they were also managed with cerclage, thus only 39 women remained to the only progesterone group. One of those was excluded as she declined a cerclage despite a very short cervix at the initial evaluation (10 mm). The patients' characteristics are shown in table 1. Table 2 and 3 present the pregnancy outcome in the two groups separately and in the entire group. The preterm delivery rate before 34 and 32 weeks was 14% and 8%, respectively and the mean prolongation of pregnancy was 15. 6 weeks. One of the cases in the cerclage group had a iatrogenic preterm birth due to intrauterine growth restriction. If we exclude this case the spontaneous preterm delivery rate <34 weeks was 13%. Table 1. Maternal and antenatal characteristics Progesterone Cerclage p-value Age 34 (23-45) 32 (23-39) . 452 BMI 25. 7 (21-39) 25. 2 (18-36) . 544 Cervical length 22 (15-25) 11 (0-14) <. 001 Smoking 7/38 11/62 . 932 Cesarean section 0/38 4/62 . 161 1st trimester miscarriage 10/38 13/62 . 537 2nd trimester miscarriage 2/38 8/62 . 311 History of preterm birth 2/38 2/62 >. 999 Bicornuate uterus 1/38 1/62 >. 999 Cervical conization 2/38 0/62 . 142 IVF pregnancy 2/38 2/62 >. 999 Preterm contractions 3/38 4/62 >. 999 Tocolysis 2/38 2/62 >. 999 Corticosteroids 18/38 21/62 . 179 PPROM 1/34 3/53 . 653 Mean

cervical length (range) Cervical funneling 19/38 24/62 . 268 Gestational age at start of intervention 22. 4 (19. 3 – 25. 4) 23. 3 (19. 0 – 25. 6) . 003

Table 2. Perinatal outcome of the two groups

| | Progesterone | Cerclage | p-value |
|---|---|---|---|
| Gestational age at delivery | 38. 4 (25. 3 – 41. 1) | 38. 4 (20. 0 – 40. 4) | . 761 |
| Delivery 34-32 weeks | 2/38 | 4/62 | >. 999 |
| Delivery <32 weeks | 2/38 | 6/62 | . 485 |
| Latency period | 16 (1. 6 – 19. 1) | 14. 9 (0. 7 – 20. 4) | . 011 |
| Birthweight | 3100 (820 -3960) | 3137 (510 – 4500) | . 786 |
| NICU | 5/38 | 9/62 | . 849 |
| CPAP | 2/38 | 8/62 | . 311 |
| Intubation | 3/38 | 0/62 | . 052 |
| Neonatal death | 1/38 | 2/62 | >. 999 |

Table 3. Perinatal outcome of the entire group

| | |
|---|---|
| Gestational age at delivery | 38. 4 (20-41. 4) |
| Delivery <34 weeks | 14/100 |
| Delivery <32 weeks | 8/100 |
| Latency period (weeks) | 15. 6 (0. 7 – 20. 4) |
| Birthweight | 3122 (510 4500) |
| NICU | 14/100 |
| CPAP | 10/100 |
| Intubation | 3/100 |
| Neonatal death | 3/100 |

## Conclusion

The implementation of the two steps protocol in women with a mid-trimester short cervix resulted in a 97% neonatal survival rate. The mean gestational age at birth was 38. 4 weeks, while the rate of preterm delivery < 34 wks was 14% and < 32 wks was 8%.