

# Pregnancy outcomes after insertion of cervical cerclage: a single centre study



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## Introduction

Preterm deliveries are associated with significant morbidity and mortality of the new-borns. Women who are at a higher risk of preterm birth should be managed in preterm birth prevention clinics as per saving babies' lives version 3.<sup>[1]</sup> Moreover, cerclage is one of the prophylactic intervention options for prevention of preterm birth. In University Hospitals Dorset NHS Foundation Trust (UHD), cervical cerclage is the preferred method of cerclage, and it is done as a day-case procedure. This study aims to compare pregnancy outcomes after insertion of cervical cerclages in UHD under different indications with recommendations from Royal College of Obstetricians and Gynaecologists (RCOG) Green-top Guideline (number 75).<sup>[2]</sup>

## Methods

Patients who underwent insertion of cervical cerclage between January 2020 and June 2023 at UHD were identified using the theatre code (R121). Out of the 47 patients who underwent the procedure, 4 were excluded as they continued their care elsewhere. The following data was collected retrospectively on the 43 patients by reviewing their notes on Medway and Badgernet:

- Age and Booking BMI
- Smoking history
- Results of midstream urine (MSU) and low vaginal swab (LVS) prior to insertion of cerclage
- Gravida and parity
- Identification of risk of preterm birth (according to saving babies' lives care version 3)<sup>[1]</sup>
- Gestational age at first visit to preterm birth clinic and insertion of cerclage
- Classification of indication for cerclage: History-indicated, Ultrasound-indicated and Rescue
- Use of other methods, for instance, progesterone and/or arabin pessary alongside cervical cerclage
- Gestational age and cerclage insertion and removal
- Gestational age and mode of delivery

From the above data, date of cerclage insertion to delivery was calculated.

## Results

Please refer to the tables, pie charts and box and whisker plot below for summary of some collected data. Only two out of the forty-three MSU had growth of bacteria and they were treated accordingly. Parity ranged from 0 to 7 with the mode of parity being 1. In terms of gestational age, it ranged from 13+1 to 21+3 at time of first review in preterm birth clinic.

Table 1. Patient Stratification by Age Group

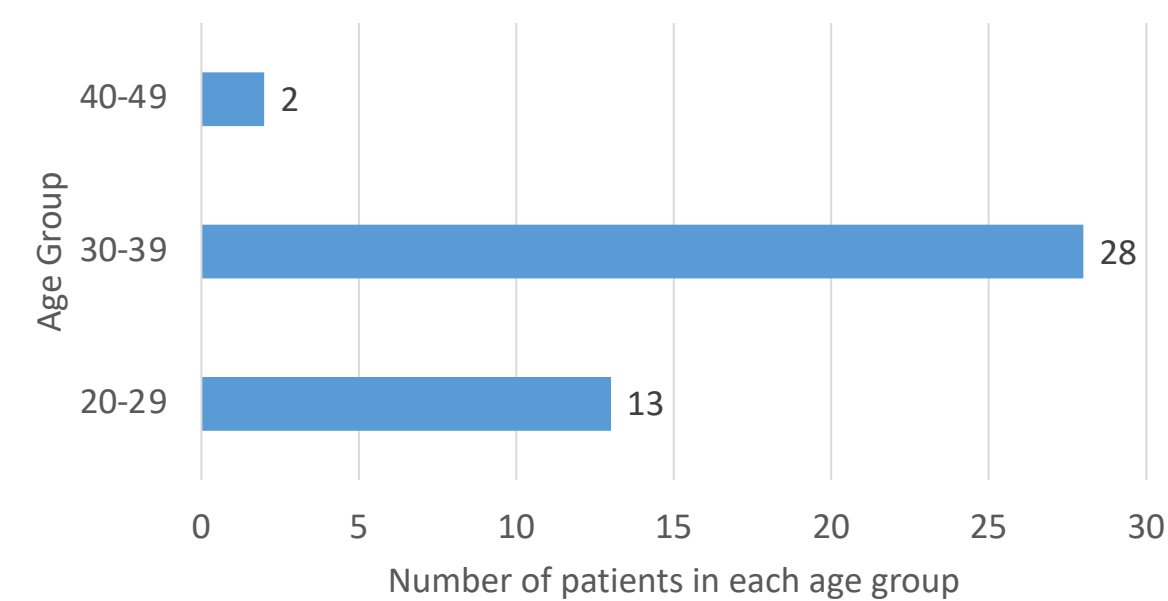


Table 2. BMI Classification

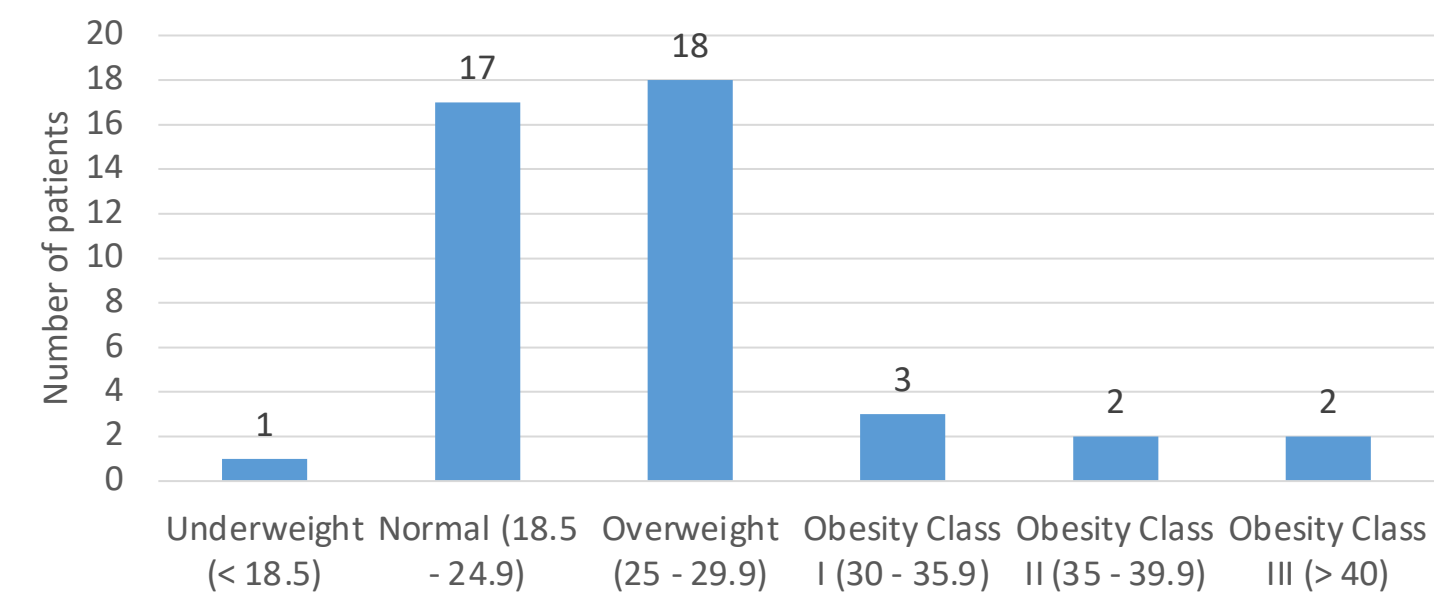


Chart 1. Smoking History

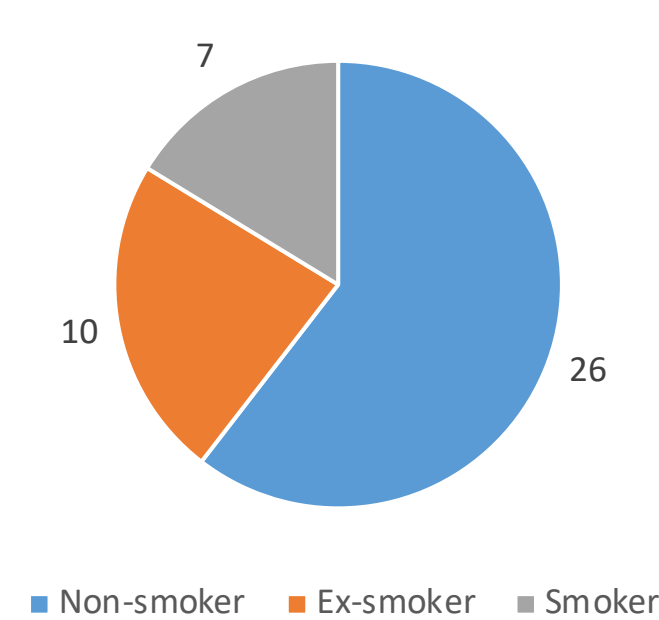


Chart 2. Results of LVS Culture

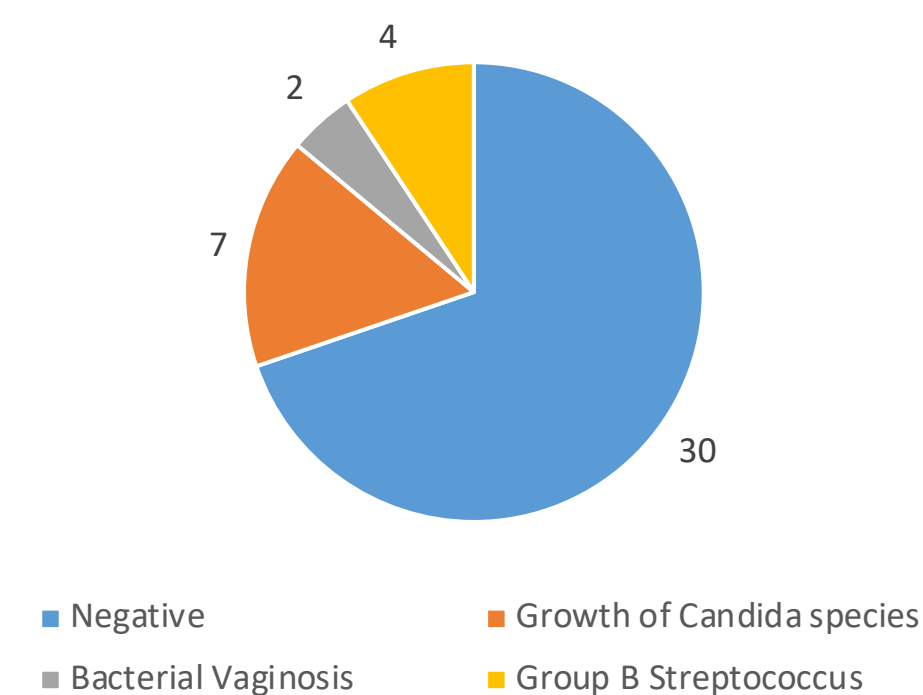


Chart 3. Risk of preterm birth

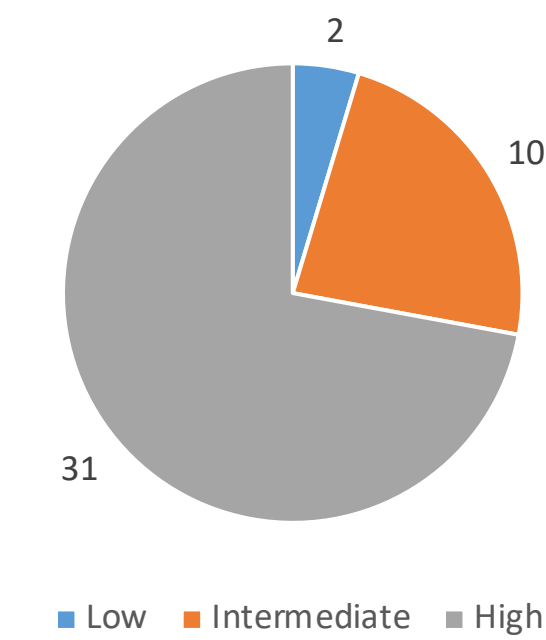


Chart 4. Types of Cerclage

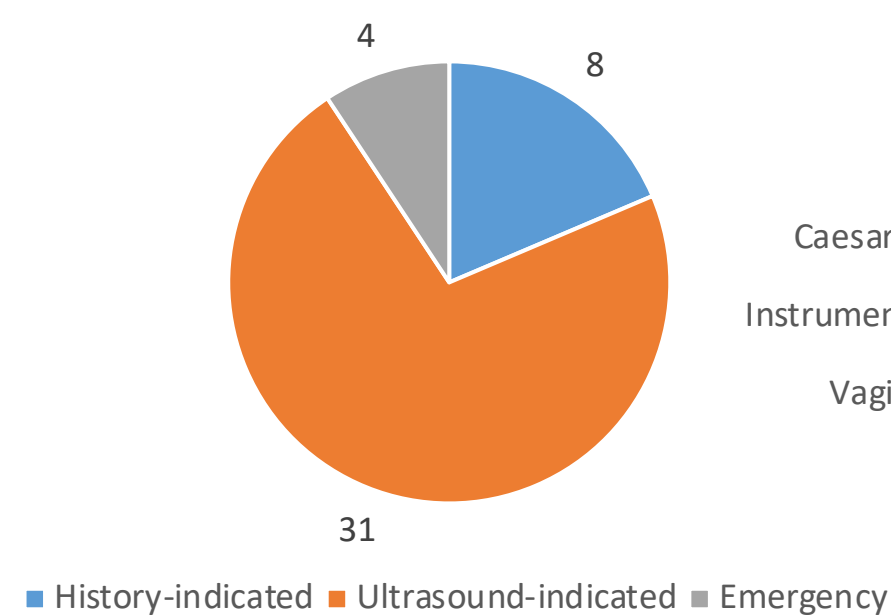
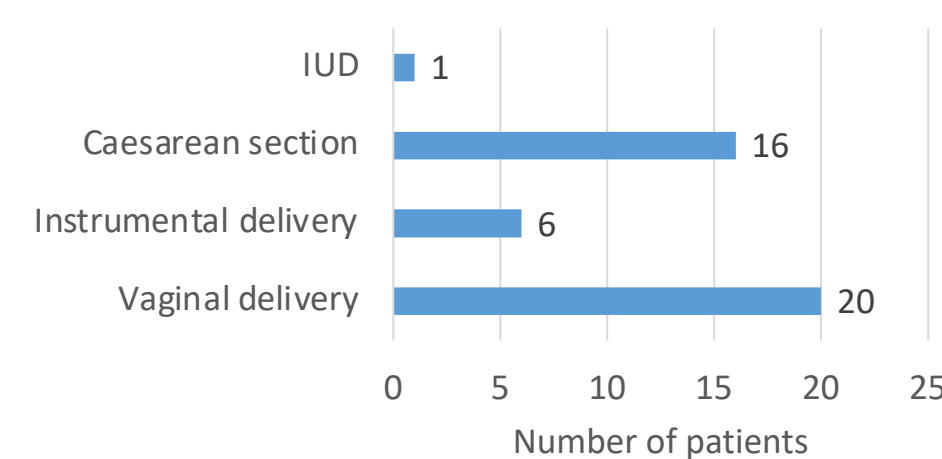
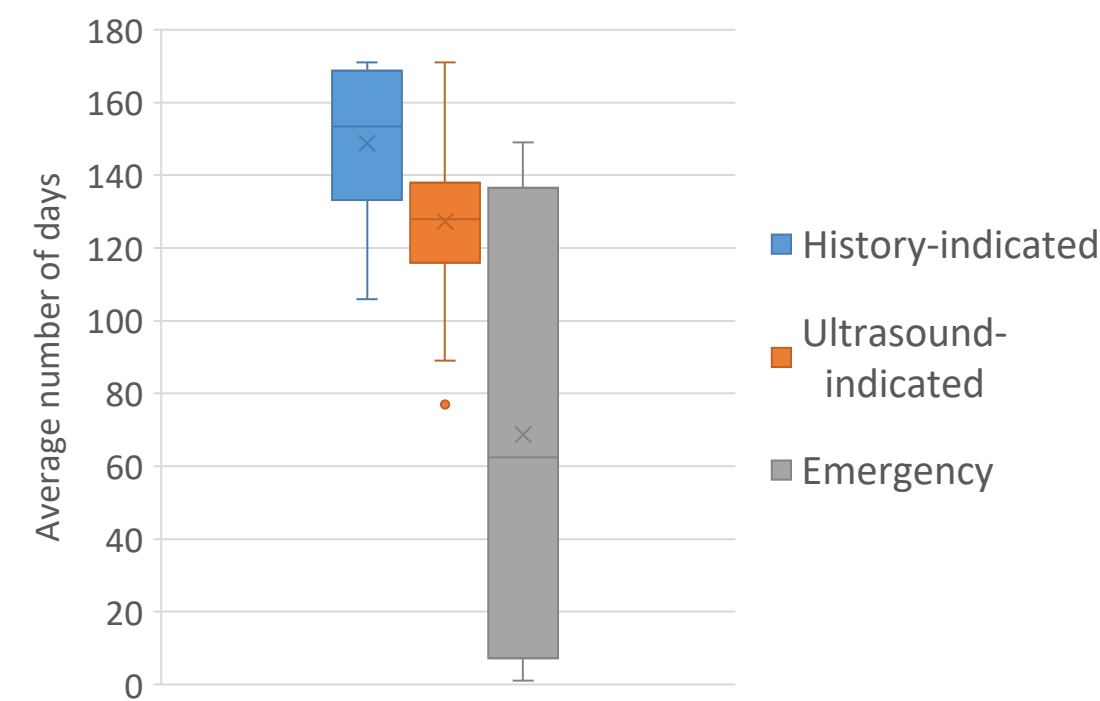


Table 3. Mode of Delivery



Box and whisker plot. Average number of days between insertion of cervical cerclage and delivery



## Results

Twenty-eight ladies had concurrent use of progesterone pessary alongside insertion of cervical cerclage to prevent preterm birth. Interestingly, only three ladies had arabin pessary fitted in this cohort but two of them opted for insertion of cervical cerclage at a later date as the length of the cervix remained < 25mm and found the pessary uncomfortable. The remaining lady had arabin pessary fitted after insertion of cervical cerclage.

Ten ladies had preterm deliveries after various attempts to prevent preterm birth: 70% of them were classed as high risk, 10% were intermediate risk and 20% were low risk. Moreover, one of the preterm deliveries was at 24+4 weeks and unfortunately, this was an intra-uterine death. **In addition, there is statistical difference in the average period between history-indicated or ultrasound-indicated cerclage (box and whisker plot; p=0.03).** This is possibly because history-indicated cerclages are inserted at earlier in gestation. Therefore, for history-indicated cerclages, we would recommend insertion as soon as possible, as compared to waiting until the cervix becomes shortened (< 25mm).

## Conclusion

While awaiting published results from the SuPPoRT trial<sup>[4]</sup>, cerclage has remained one of the mainstay options of prophylactic intervention for prevention of preterm birth. In UHD, patients are extensively counselled regarding the management options for preterm birth in ladies who have existing risk factors. It is important to facilitate informed decision making of patients as they may have preferences for different treatment options available.

## References

1. Saving babies' lives version three: a care bundle for reducing perinatal mortality [Internet]. NHS; [cited 2023 Dec 11]. Available from: <https://www.england.nhs.uk/publication/saving-babies-lives-version-three/>
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4. Hezelgrave NL, Watson HA, Ridout A, Diab F, Seed PT, Chin-Smith E, Tribe RM, Shennan AH. Rationale and design of SuPPoRT: a multi-centre randomised controlled trial to compare three treatments: cervical cerclage, cervical pessary and vaginal progesterone, for the prevention of preterm birth in women who develop a short cervix. *BMC pregnancy and childbirth*. 2016 Dec;16:1-0.