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Complications of second-trimester medical termination of pregnancy

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Objective

The primary objective was to quantify the risks of surgical intervention, postpartum hemorrhage, and uterine rupture associated with second-trimester medical termination of pregnancy (mTOP). The secondary objectives were to analyze the factors influencing these risks and gain insight into the induction times of second-trimester mTOPs.

Methods

A retrospective cohort study was performed. From 2008 to 2021, all medical pregnancy terminations (mTOP) between 11^{+0} and 23^{+6} weeks of gestation carried out at the Amsterdam University Medical Center were included. Inductions because of intra-uterine fetal death were excluded. mTOP was performed using a standardized combination of mifepristone and misoprostol. The primary outcome measures were surgical interventions (manual or instrumental, <24hrs after birth), blood loss, and uterine rupture. A postpartum hemorrhage was defined as > 500 ml blood loss and uterine rupture as a complete division of all three layers of the uterus). Secondary outcome measures were a history of manual or instrumental intra-uterine intervention(s)/ cesarean section(s), indication for mTOP, the number of misoprostol doses administered, and the time from the first dose of misoprostol until the birth of the fetus. Risk factors were analyzed through multinomial logistic regression analyses, which included the secondary outcome measures and the baseline characteristics maternal age, BMI, and parity as covariates. Differences between groups were analyzed using the Chi-square and Mann-Whitney U test depending on applicability. The 95% confidence intervals of the proportions were calculated using the Clopper-Pearson exact method.

Results

In total, 1114 second-trimester mTOPs were included. 44.1% of the patients were nulliparous, the mean maternal age was 33.1 ± 5.5, and the mean BMI was 24.0 ± 5.1. Surgical intervention was performed in 25.7% [95% CI 23.1% – 28.3%] of cases. 66.8% of these interventions were performed for a fully retained placenta, 29.4% for suspected placental remnants, 2.1% for failed mTOP, and 1.7% for a uterine rupture). Significant risk factors for surgical intervention were a longer time between the start of induction and fetal birth (OR 1.08; unit of change 6 hours), younger GA at birth OR 1.07; unit of change one week), nulliparity (OR 2.2), previous CS OR (2.3). If the fetus, placenta, and membranes were born simultaneously (in toto), the rate of surgical intervention was significantly lower, 3.4% vs. 34.2%, p<0.001. Postpartum hemorrhage occurred in 20.5% [18.1% – 22.9%] of cases. Significant risk factors were a longer time between the start of induction and fetal birth (OR 1.08; unit of change 6 hours) and previous manual placenta removal (OR 2.1). The overall median amount of blood loss was 180ml (IQR 100-380). The median and IQR for the retained placenta and placental remnants groups were 550ml (IQR 300-1000) and 700ml (IQR 350-1200), respectively (difference not significant). Five cases of uterine rupture occurred, 4 of which were in patients with one or more previous cesarean sections. The median time from the first dose of misoprostol to fetal birth was 8.1 hours (5^{th} centile: 3.1hrs – 95^{th} centile: 30.6hrs).

Conclusion

In our cohort, second-trimester mTOP led to 91.3% of fetuses being born within 24 hours after the first dose of misoprostol. In 17.1% of cases, surgical intervention was performed for a fully retained placenta, and in 7.5% of cases for placental remnants. Postpartum hemorrhage occurred in 20.5%. The risk of uterine rupture in women without a history of CS was 0.1% (95% CI: 0.003% – 0.6%) and 3.4% (95% CI 0.9% – 8.4%) in women with a history of CS.