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[Intervention Review]

Cervical preparation for second trimester dilation and evacuation

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ABSTRACT

Background

Abortion during the second trimester of pregnancy accounts for 10-15% of abortions performed worldwide. Dilation and evacuation (D&E) is the preferred method of second-trimester abortion in most parts of the developed world. Cervical preparation is recommended for dilation and curettage (D&C) after 12 weeks gestation and is standard practice for D&E beyond 14 weeks gestation. Prostaglandins, osmotic dilators, and Foley balloon catheters have been used and studied as cervical preparation prior to second-trimester D&E. However, no consensus exists as to which cervical preparation method is superior with regards to safety, procedure time, need for additional dilation, ability to perform the procedure, or patient and provider acceptability. Despite the fact that the advent of osmotic dilation has improved the safety of the D&E procedure during the second trimester, it is unclear whether a certain type of osmotic dilator is superior to another or whether osmotic dilation with adjuvant prostaglandin is superior to osmotic dilation alone or to prostaglandins alone.

Objectives

This review evaluates cervical preparation methods for second-trimester surgical abortion with respect to differences in procedure time, dilation achieved, need for additional dilation, complications, ability to complete the procedure, patient pain scores, and patient and provider acceptability and satisfaction.

Search methods

We searched for trials of cervical preparation prior to second-trimester D&E.

Selection criteria

We included all randomized controlled trials that compared osmotic, mechanical, antiprogesterone, prostaglandin, or other medical agents of cervical preparation for second-trimester surgical abortion from 14-24 weeks of gestation.

Data collection and analysis

Data were abstracted by two authors and data entry was verified by a third author. Mean difference and Peto Odds Ratio were calculated.

Main results

Osmotic dilators were found to be superior to prostaglandins with respect to cervical dilation throughout the second trimester and with respect to procedure time within the early second trimester. Addition of prostaglandins to osmotic dilators was not found to increase cervical dilation, except after 19 weeks gestation, however, no impact was seen on procedure time. Addition of Mifepristone to misoprostol was found to improve cervical dilation, yet increase procedure time and frequency of pre-procedural expulsions. Two-day cervical preparation was found to produce greater cervical preparation than one-day, but had no impact on procedure time. Serious complication rates or ability to complete the procedure did not differ significantly between any of the preparation methods reviewed.

Authors' conclusions

Cervical preparation with osmotic dilators and/or misoprostol before second-trimester D&E is safe and effective. Osmotic dilators appear to provide superior cervical dilation when compared to prostaglandins alone or when combined with prostaglandins, however this difference in cervical dilation does not appear to result in differences in procedure time or complication rates. There does not appear to be clear clinical benefit from two days of cervical preparation compared to one-day prior to second-trimester D&E below 19 weeks gestational duration. Mifepristone plus misoprostol was associated with high rates of pre-procedural expulsions and does not appear to be a useful method of cervical preparation before second-trimester dilation and evacuation. Same-day procedures appear to be a safe and reasonable option in the early second trimester, however, more research is needed to assess the effectiveness and safety of same-day procedures in the later second trimester.

PLAIN LANGUAGE SUMMARY

Preparation of the uterine cervix before evacuation of second-trimester pregnancy

Abortion during the second trimester of pregnancy accounts for 10-15% of abortions performed worldwide (Finer 2005; Stat. Service. 2005; WHO 1997). Surgical evacuation, called dilation and evacuation (D&E), is the preferred method of second-trimester abortion, as opposed to induction of labor, in most developed countries where D&E and medical methods are both available (Lohr 2008; RCOG 2004). In order to perform a D&E, surgical instruments must pass through the cervix, the opening to the uterus, into the uterus. In order for these instruments to pass through the cervix safely, the cervix must be opened prior to the procedure. This process of opening the cervix prior to a D&E is called cervical preparation and can be done with medications or with small rod-like devices that are placed inside the cervix. The most commonly used medications for cervical preparation are called prostaglandins. These medications can be taken orally or placed in the vagina or the cheeks and need to be taken several hours before the procedure. They work by softening, thinning, and opening the cervix so that at the time of the procedure it is possible to further open the cervix if needed and to place the instruments through the cervix into the body of the uterus. The small-rod like devices used for cervical preparation are called cervical dilators. Dilators are placed inside the cervix several hours before the procedure or even a day or two before the procedure. In general, dilators work by absorbing moisture from the cervix which causes the dilators to swell and get larger. As the diameter of these dilators expands the dilator puts radial pressure on the cervical walls and causes the cervix to open.

There are many options of what to use for cervical preparation before a second-trimester D&E. These methods have different side effects and take varying amounts of time from about four hours prior to the procedure to two days before. Since there is no clear consensus as to what cervical preparation method is best for preparing the cervix for a second-trimester D&E, we reviewed all published, randomized trials that compared different methods of cervical preparation before second-trimester D&E, defined as between 14 and 24 weeks of pregnancy.

We did computer searches for all published randomized trials that compared different methods of cervical preparation before second-trimester D&E and we found six studies that met our criteria. All of the methods compared were different from one another, thus it was not possible to combine data from multiple studies. We looked at how these preparation methods compared with respect to safety, procedure time, need for additional dilation, ability to perform the procedure, and patient and provider acceptability.

We found that all methods reviewed were safe. Certain dilators called laminaria appeared to result in more cervical opening (dilation) than the prostaglandin medications, however no difference was seen between dilators and prostaglandins with respect to safety, length of procedure, or the ability to complete the procedure. We found that when mifepristone, a medication that blocks the action of a hormone called progesterone, was used with a prostaglandin called misoprostol that many women ended up expelling the pregnancy before their desired surgical procedure. Due to this increased rate of expulsions prior to planned D&E, we feel that the combination of mifepristone and misoprostol should not be used for cervical preparation when women are desiring a surgical procedure instead of

an induction. We found that one day of cervical preparation is just a good as two days and that same-day cervical preparation appears to be safe in the early part of the second trimester.

We believe that more research is needed in the area of same-day cervical preparation as it is much easier for women to have a one-day instead of a multiple day procedure. We also think more research is needed in the area of combining prostaglandins with dilators as this may improve the possibility of conducting same-day procedures later into the second trimester.