Contraception

Contraception 94 (2016) 127 – 133

Original research article

A randomized controlled trial evaluating same-day mifepristone and misoprostol compared to misoprostol alone for cervical preparation prior to second-trimester surgical abortion☆,☆☆,★,★★

Frances E. Casey[a,*], Peggy P. Ye[b], Jamila D. Perritt[c], Nilda L. Moreno-Ruiz[d], Matthew F. Reeves[b,c,e,f]

[a]Virginia Commonwealth University Medical Center, Richmond, VA, USA
[b]MedStar Washington Hospital Center, Washington, DC, USA
[c]Planned Parenthood Metropolitan Washington, Washington, DC, USA
[d]Dominican Hospital, Santa Cruz, CA, USA
[e]National Abortion Federation, Washington, DC, USA
[f]Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, USA

Received 25 September 2015; revised 29 February 2016; accepted 29 February 2016

Abstract

Objective: We evaluated initial cervical dilation with the addition of oral mifepristone to vaginal misoprostol as cervical preparation for same-day second-trimester dilation and evacuation (D&E).

Study design: Women desiring abortion between gestational ages 14 weeks 0 days and 19 weeks 6 days were randomized to 200-mg mifepristone or identical placebo immediately followed by 400-mcg misoprostol vaginally 4–6 h prior to D&E. Primary outcome was cervical dilation assessed by largest Hegar dilator passed without resistance. Secondary outcomes included total procedure time and participant and provider perceptions. We had 90% power to detect a 2-mm change in initial cervical dilation with a mean of 10 mm (SD=3.0 mm), requiring 48 participants in each arm.

Results: Of 100 women enrolled, 96 were randomized and completed the study. Age, race, gestational age (mean 17.4 weeks, SD=1.3) and parity did not significantly differ. Mean initial Hegar dilation measurements were 11.7 and 10.9 mm in the mifepristone and placebo groups, respectively, with difference of 0.8 [95% CI=−0.4, 2.0 mm]. We found total procedure times of 11.8 and 13.0 min, respectively (difference of 1.2 min [95% CI=−2.4, 4.8 min]. Participant and provider perceptions did not differ. All 96 procedures were completed without hemorrhage, cervical laceration or other observed complications.

Conclusion: The addition of mifepristone to vaginal misoprostol did not provide a significant increase in cervical dilation compared to misoprostol alone as cervical preparation 4–6 h prior to D&E at 14 weeks through 19 weeks 6 days.

Implications: Adding mifepristone for a short interval (4–6 h) did not improve cervical preparation with misoprostol prior to D&E at 14–19 weeks. Future studies should evaluate alternative timing intervals of medications for this purpose.

Keywords: Mifepristone; Misoprostol; Dilation and evacuation; Abortion

1. Introduction

Second-trimester dilation and evacuation (D&E) procedures at 14 weeks or greater require cervical preparation [1]. Simpler and more effective same-day cervical preparation using medications alone prior to second-trimester abortion could facilitate expanded access to second-trimester abortion by reducing the need for osmotic dilator placement and shortening cervical preparation time. Although the use of

☆ Source of Funding: The Society of Family Planning Research Fund.
☆☆ This research was presented in part as an oral abstract at the North American Forum on Family Planning, Miami, FL, 2014.
★ Conflict of Interest: The authors do not have any conflicts of interest.
★★ Clinicaltrials.gov registration: # NCT02412618.
* Corresponding author.
E-mail address: frances.casey@vcuhealth.org (F.E. Casey).

http://dx.doi.org/10.1016/j.contraception.2016.02.032
0010-7824/

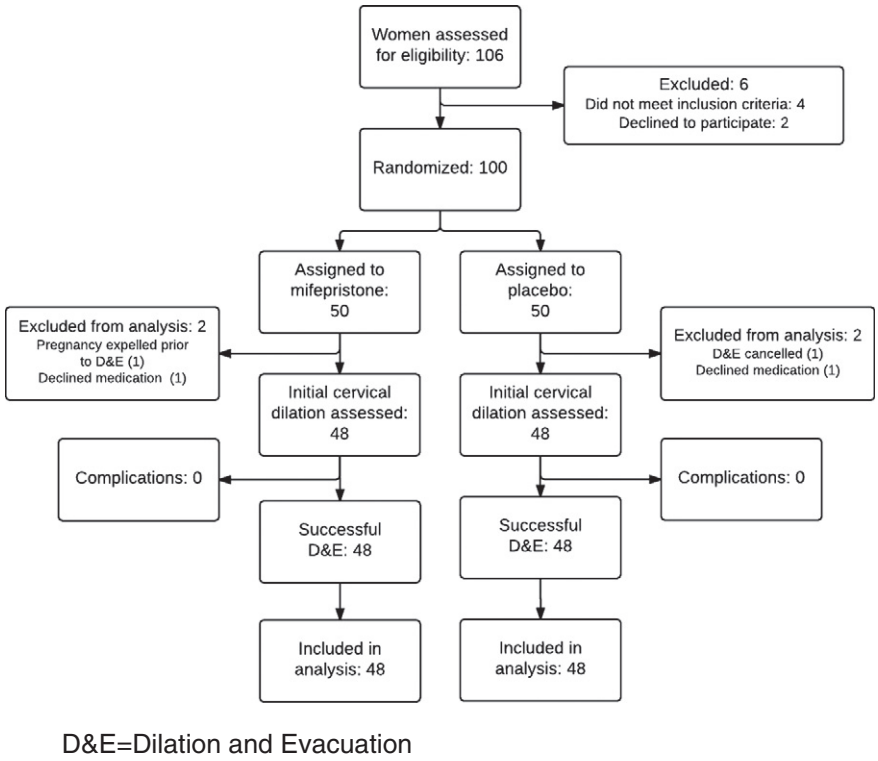

Fig. 1. Study flow diagram.

mifepristone and misoprostol concurrently has been shown to be effective for early medical abortion [2], concurrent mifepristone and misoprostol has not been evaluated for second-trimester cervical preparation.

A case series by Jacobson et al. [3] that included women between 17 and 20 weeks gestation suggests same-day misoprostol alone can be effective cervical preparation prior to surgical procedures, a practice utilized in many offices. A randomized trial evaluating same-day misoprostol alone prior to second-trimester surgical abortion showed that same-day cervical preparation is safe and strongly preferred by participants but requires increased procedure time and further dilation as compared to overnight laminaria [4]. For second-trimester induction terminations, the addition of mifepristone, a progesterone antagonist, 24–48 h prior to a misoprostol regimen has been shown to significantly decrease the medication-to-abortion interval [5]. However, this combination has not been extensively studied prior to surgical abortions. A Cochrane review (2010) of cervical preparation for second-trimester D&E did not recommend this combination for cervical priming due to high rates of preprocedural expulsions [6]. However, a 48-h interval between mifepristone and misoprostol for cervical preparation in the trial most contributing to this conclusion (Carbonell et al. [7]) may have accounted for the high out-of-facility expulsion risk as 2 participants were expelled from mifepristone alone and 15 from the combination. This trial showed a significant increase of 4 mm in mean cervical dilation with the addition of mifepristone to misoprostol alone.

We conducted a randomized controlled trial to evaluate adjunctive oral mifepristone immediately following vaginal misoprostol for cervical preparation prior to D&E.

2. Materials and methods

We enrolled healthy women, over 18 years of age, eligible for nonurgent D&E at 14 weeks 0 days to 19 weeks 6 days gestation, confirmed by sonogram. We excluded participants for any of the following reasons: emergent need for D&E, fetal demise, allergy or contraindication to mifepristone or misoprostol. We recruited participants at MedStar Washington Hospital Center and Planned Parenthood of Metropolitan Washington. The Institutional Review Board at Washington Hospital Center approved the study protocol.

A research staff member at the MedStar Health Research Institute not involved in study recruitment or analysis created two computer-generated randomization sequences, one for each site. Research pharmacy staff encapsulated mifepristone 200 mg or placebo in a dark gelatin capsules. The pharmacy staff then prepared two sets of sequentially numbered opaque sealed envelopes containing one capsule of mifepristone or placebo, according to the randomization sequence for each site. Neither the investigators nor research coordinators were involved in randomization generation or creation of the envelopes. As the medications looked, smelled, and tasted alike, the participants were blinded to allocation, as were the research staff and clinical providers.