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**Date:** 09 April 2019

**Sources Searched:** Embase, Medline

## Use of Dinoprostone Following Intrauterine Fetal Death

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### **1. Current Practices of Cervical Ripening and Induction of Labour in Intrauterine Foetal Demise: An Observational Study.**

**Author(s):** Amin, Kinnari V; Chauhan, Anahita R; Goel, Anchal

**Source:** Journal of obstetrics and gynaecology of India; Feb 2019; vol. 69 (no. 1); p. 37-42

**Publication Date:** Feb 2019

**Publication Type(s):** Journal Article

**PubMedID:** 30814808

Available at [Journal of obstetrics and gynaecology of India](#) - from SpringerLink

**Abstract:**BackgroundObjectives of the current study were to find the most effective method of induction of labour in case of intrauterine foetal death (IUFD), with efficacy described as least induction-to-delivery time, and the agent with the best safety profile, i.e. least maternal complications.MethodsThis was a prospective observational descriptive study carried out between January and November 2015 in a tertiary care centre. Hundred consecutive cases of IUFD after 20 weeks of gestation requiring induction of labour and fulfilling inclusion criteria were selected. The method of induction decided by each consultant was noted, and results were analysed. As this was a purely observational study, all agents used for induction of labour (misoprostol, dinoprostone gel, intracervical Foley catheter) and all dose variations were included.ResultsThe induction-to-delivery interval was shortest with dinoprostone (12.52 h) followed by Foley catheter (13.28 h) and misoprostol (15.82 h). However, the p value (0.301) was not statistically significant. Misoprostol was used more often in second trimester, while dinoprostone gel was most commonly used in third trimester. Failure occurred in 3 cases; all required lower segment caesarean section (LSCS). No significant complications were associated with any of the methods.ConclusionsDinoprostone gel, misoprostol and Foley catheter are safe for induction of labour in all cases of IUFD, even for those with previous LSCS with IUFD.

**Database:** Medline



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## 2. Comparison of intravaginal misoprostol (PGE1) with dinoprost (PGE2) for termination of 2<sup>nd</sup> trimester pregnancy

**Author(s):** Huma N.; Arif W.; Saira

**Source:** Pakistan Journal of Medical and Health Sciences; 2016; vol. 10 (no. 2); p. 452-454

**Publication Date:** 2016

**Publication Type(s):** Article

**Abstract:**Aim: To compare the effectiveness and side effects of intravaginal misoprostol(PGE1) with dinoprostone (PGE2) for labour induction in second trimester termination of pregnancy. Design: Prospective experimental study. Setting: Lady Aitchison Hospital, Lahore. Duration: For a period of eight months from July 2014 to February 2015. Methods: Hundred women with mid-trimester foetal loss or congenitally malformed foetus on ultrasonography were selected. These women were randomized to receive either intravaginal misoprostol or dinoprostone. Main outcome measures were efficacy and safety in terms of abortion-induction interval and side effects. Induction was considered successful where abortion was achieved. Results: The average induction-abortion interval in the misoprostol group was 15.05 hours and successful abortion was achieved in 80% (40/50) of cases whereas in PGE2 group 48% (24/50) aborted in the same time interval (15.05 hours). The rate of incomplete abortion requiring evacuation and curettage was 20% (10/50) in misoprostol group and 52% (26/50) in PGE2 group. In PGE1 Group frequently observed side effects were chills 12(24%), fever 7(14%), abd. pain occurred in 20(40%) Conclusion: The less expulsion time, higher rate of complete miscarriage and minimal side effect seen in misoprostol group in our study showed that vaginal misoprostol is superior as a labour inducing agent in comparison to PGE2 dinoprostone) for termination of 2nd trimester of pregnancy.

**Database:** EMBASE

## 3. The comparison of misoprostol and dinoprostone for termination of second trimester pregnancy

**Author(s):** Khooshideh M.

**Source:** Journal of Medical Sciences; Feb 2007; vol. 7 (no. 2); p. 289-293

**Publication Date:** Feb 2007

**Publication Type(s):** Article

Available at [Journal of Medical Sciences](http://www.free-medical-journals.com) - from Free Medical Journals . com

**Abstract:**To assess the effectiveness of prostaglandin E1 analog, misoprostol, compared with a prostaglandin E2 analog, dinoprostone in termination of pregnancies in second trimester complicated by intrauterine fetal death. This clinical trial was performed on 40 pregnant women between 15 and 28 weeks which were terminated due to intrauterine fetal demise. In group 1 (n = 20) 400 mug vaginal misoprostol and in group 2 (n = 20) 0.5 mg vaginal dinoprostone gel were given for termination of the pregnancies. Two groups were evaluated for demographic characteristics. Time from administration of drug to delivery was recorded in all patients. Side effects, operative removal of the placenta, amount of blood loss and the mean dose of oxytocin using in each group were recorded in two groups. The time interval between the first administration to delivery was 13.2 h for vaginal misoprostol and 15.1 h for vaginal dinoprostone group and there was no significant differences between groups. All of cases aborted within 24 h. No major complication was seen in



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patients of two groups. Also there was no significant differences in amount of blood loss, operative removal of the placenta. The mean dose of oxytocin used in dinoprostone group was higher than the other group ( $p = 0.01$ ). The effectiveness of misoprostol for termination of second trimester pregnancy is comparable to that of dinoprostone. The major advantage of misoprostol was cost.

**Database:** EMBASE

#### **4. Prostaglandin E2 mid-trimester evacuation of the uterus for women with a previous cesarean section.**

**Author(s):** Reichman, O; Cohen, M; Beller, U

**Source:** International journal of gynaecology and obstetrics: the official organ of the International Federation of Gynaecology and Obstetrics; Jan 2007; vol. 96 (no. 1); p. 32-33

**Publication Date:** Jan 2007

**Publication Type(s):** Journal Article

**PubMedID:** 17189634

Available at [International journal of gynaecology and obstetrics: the official organ of the International Federation of Gynaecology and Obstetrics](#) - from Wiley Online Library Science , Technology and Medicine Collection 2017

**Database:** Medline

#### **5. Termination of second and early third trimester pregnancy: comparison of 3 methods.**

**Author(s):** Bani-Irshaid, I; Athamneh, T Z; Bani-Khaled, D; Al-Momani, M; Dahamsheh, H

**Source:** Eastern Mediterranean health journal = La revue de sante de la Mediterranee orientale = al-Majallah al-sihhiyah li-sharq al-mutawassit; Sep 2006; vol. 12 (no. 5); p. 605-609

**Publication Date:** Sep 2006

**Publication Type(s):** Comparative Study Randomized Controlled Trial Journal Article

**PubMedID:** 17333800

**Abstract:**The efficacy and safety of 3 methods used in legal termination of pregnancy in the second and early third trimester was assessed in 258 women in Jordan randomly assigned to receive Foley catheter (with and without traction) or prostaglandin E2 vaginal tablets. The failure rate of termination and the total insertion-to-termination time was higher with Foley catheter without traction (16.5%, 16.5 hours) than with traction (10.0%, 14.2 hours) or prostaglandin (8.0%, 11.5 hours). However, Foley catheter as a method of termination of pregnancy in second and early third trimester is safe and inexpensive, and its efficacy can be enhanced with the use of traction to give similar results to prostaglandin E2.

**Database:** Medline



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## 6. Intrauterine fetal death

**Author(s):** Kean L.

**Source:** Current Obstetrics and Gynaecology; Aug 2006; vol. 16 (no. 4); p. 199-205

**Publication Date:** Aug 2006

**Publication Type(s):** Article

**Abstract:** Sadly, intrauterine fetal death is a common occurrence and one that all labour ward personnel should be trained to manage. Recent advances have improved the likelihood of identifying a cause. The key to this is a logical and methodical approach to investigation. Postmortem examination remains a critical aspect of investigation and labour ward teams require a clear understanding of the legal aspects of this. Sympathetic and supportive care of parents should respect parental wishes and allow choice wherever possible. However, maternal safety should also be a central aspect of this care. © 2006 Elsevier Ltd. All rights reserved.

**Database:** EMBASE

## 7. Treatment of intrauterine fetal death by means of a PGE2-filled portio adapter.

**Author(s):** Bodner, K; Wierrani, F; Grünberger, W

**Source:** International journal of gynaecology and obstetrics: the official organ of the International Federation of Gynaecology and Obstetrics; May 2006; vol. 93 (no. 2); p. 138-139

**Publication Date:** May 2006

**Publication Type(s):** Journal Article

**PubMedID:** 16603165

Available at [International journal of gynaecology and obstetrics: the official organ of the International Federation of Gynaecology and Obstetrics](#) - from Wiley Online Library Science , Technology and Medicine Collection 2017

**Database:** Medline

## 8. Medical management for termination of second and third trimester pregnancies: a comparison of strategies.

**Author(s):** De Heus, Roel; Graziosi, Giuseppe C M; Christiaens, Godelieve C M L; Bruinse, Hein W; Mol, Ben W J

**Source:** European journal of obstetrics, gynecology, and reproductive biology; Sep 2004; vol. 116 (no. 1); p. 16-21

**Publication Date:** Sep 2004

**Publication Type(s):** Comparative Study Multicenter Study Journal Article

**PubMedID:** 15294361

**Abstract:** OBJECTIVE Misoprostol and sulprostone are prostaglandins that can be used for the termination of second and third trimester pregnancy. The aim of the present study was to compare the effectiveness of both agents for the termination of second and third trimester pregnancy in cases of congenital or genetic abnormalities, and for the induction of labour in cases of intra-uterine foetal death. STUDY DESIGN We collected data from all women who had been treated with



misoprostol in the second or third trimester of pregnancy between January 2001 and July 2002 in cases of congenital or genetic abnormalities, and for the induction of labour in cases of intra-uterine foetal death. In cases where the foetus was alive, misoprostol was usually (77%) combined with mifepristone. Women were matched to women who had been treated with sulprostone for termination of second and third trimester pregnancy before 2001. We matched for hospital, previous vaginal delivery, intra-uterine death and duration of pregnancy. The primary outcome measure was time to delivery. RESULTSSince the treatment effect was different in patients in whom labour was induced for intra-uterine death and patients in whom labour was induced while the foetus was alive, the analysis was stratified for this parameter. In 94 patients with intra-uterine death, there was no significant difference in time to delivery, blood loss, operative removal of the placenta and need for pain relief between misoprostol and sulprostone. In vital pregnancy (n = 96), time to delivery was significantly shorter in the misoprostol group. The relative risk for haemorrhage exceeding 1000 ml in this group was 0.40 (95% confidence interval, CI, 0.13-1.2). We observed no significant differences with respect to operative removal of the placenta or need for pain relief. CONCLUSIONIn cases of intra-uterine death, the effectiveness of misoprostol for termination of pregnancy is comparable to that of sulprostone. In vital pregnancy, combination of mifepristone and misoprostol is more effective than sulprostone alone.

**Database:** Medline

### **9. Vaginal misoprostol versus concentrated oxytocin and vaginal PGE2 for second-trimester labor induction.**

**Author(s):** Ramsey, Patrick S; Savage, Karen; Lincoln, Tina; Owen, John

**Source:** Obstetrics and gynecology; Jul 2004; vol. 104 (no. 1); p. 138-145

**Publication Date:** Jul 2004

**Publication Type(s):** Comparative Study Randomized Controlled Trial Clinical Trial Journal Article Research Support, U.S. Gov't, P.h.s.

**PubMedID:** 15229013

Available at [Obstetrics and gynecology](#) - from Free Medical Journals . com

Available at [Obstetrics and gynecology](#) - from Ovid (LWW Total Access Collection 2015 - Q1 with Neurology)

**Abstract:**OBJECTIVETo compare the efficacy, side effects, and complications of high-dose vaginal misoprostol with concentrated intravenous oxytocin plus low-dose vaginal prostaglandin (PGE(2)) for second-trimester labor induction.METHODSOne hundred twenty-six consenting women with maternal or fetal indications for pregnancy termination and no prior cesarean delivery were randomly assigned to receive either vaginal misoprostol 600 microg 1x, 400 microg every 4 hours 5x (misoprostol group, n = 60) or escalating-dose concentrated oxytocin infusions (277-1,667 mU/min) plus vaginal PGE(2) 10 mg every 6 hours 4x (oxytocin group, n = 66). Both groups received concurrent extra-amniotic saline infusion for cervical ripening. Women who failed their assigned regimen received 20 mg of PGE(2) suppositories every 4 hours until delivery. Analysis was by intent to treat.RESULTSDemographic characteristics were similar between study groups. Median induction-to-delivery interval was significantly shorter in the misoprostol group (12 hours) than in the oxytocin group (17 hours; P <.001). There was a higher induction success rate at 24 hours in the misoprostol group (95%) than in the oxytocin group (85%; P =.06), although this difference did not reach statistical significance. The incidence of live birth (25% versus 17%), chorioamnionitis (5% versus 2%), and postpartum hemorrhage greater than 500 mL (3% versus 3%) were similar between the



misoprostol and oxytocin groups, respectively. Diarrhea (2% versus 11%;  $P = .04$ ), nausea/emesis (25% versus 42%;  $P = .04$ ), and retained placenta requiring curettage (2% versus 15%;  $P = .008$ ) were significantly less common in the misoprostol group when compared with the oxytocin group, respectively. Isolated intrapartum fever, however, was more frequent in the misoprostol group (67%) than in the oxytocin group (21%;  $P < .001$ ). **CONCLUSION** Compared with concentrated oxytocin plus low-dose vaginal PGE(2), high-dose vaginal misoprostol is associated with significantly shorter induction-to-delivery intervals, fewer side effects, a lower incidence of retained placenta, and comparable incidence of live birth.

**Database:** Medline

#### 10. Prostaglandins for induction of second-trimester termination and intrauterine death

**Author(s):** Ngai S.W.; Tang O.S.; Ho P.C.

**Source:** Best Practice and Research: Clinical Obstetrics and Gynaecology; 2003; vol. 17 (no. 5); p. 765-775

**Publication Date:** 2003

**Publication Type(s):** Review

**PubMedID:** 12972013

Available at [Best Practice and Research: Clinical Obstetrics and Gynaecology](#) - from Patricia Bowen Library & Knowledge Service West Middlesex University Hospital NHS Trust (lib302631) Local Print Collection [location] : Patricia Bowen Library and Knowledge Service West Middlesex university Hospital.

**Abstract:** The introduction of synthetic prostaglandin has revolutionized the treatment protocol for induction of second-trimester abortion and intrauterine death. Gemeprost is the only licensed synthetic prostaglandin analogue for second-trimester abortion in the United Kingdom. However, it is expensive and needs to be stored in a refrigerator. Misoprostol is marketed for use in the prevention and treatment of peptic ulcer. It is inexpensive and can be stored at room temperature. It has been widely used for induction of second-trimester abortion and intrauterine death. Misoprostol, 400 mug given vaginally every 3 hours, is probably the optimal regimen for second-trimester abortion. The combination of misoprostol and mifepristone significantly reduced the induction-to-abortion interval when compared with the misoprostol-only regimen. In addition, misoprostol can also be used as a cervical priming agent prior to dilatation and evacuation in second-trimester abortion.

**Database:** EMBASE



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**11. Cervical ripening with prostaglandin E2 How an ambulatory method decreases the hospital stay in abortus with intrauterine fetal demise**

**Author(s):** Hernandez-Valencia M.

**Source:** Fetal Diagnosis and Therapy; 2003; vol. 18 (no. 1); p. 54-58

**Publication Date:** 2003

**Publication Type(s):** Article

**PubMedID:** 12566778

Available at [Fetal Diagnosis and Therapy](#) - from ProQuest (Health Research Premium) - NHS Version

**Abstract:**Objective: This study was designed to determine whether use of prostaglandin E1 (PGE1) is justified to improve the known clinical outcome of prostaglandin E2 (PGE2) gel, because PGE2 gel preparations are more costly than PGE1 tablets in most countries, and data to support the use of the gel in clinical practice is not conclusive. The aim was to compare the safety and efficacy of PGE1 gel when applied in both an in-hospital or ambulatory setting to oxytocin infusion in those women with unfavorable cervical conditions prior to surgical abortion for either medical or obstetrical indications with intrauterine fetal demise. Surgical dilatation of the unripe cervix may result in cervical injury of uterine perforation which could prolong the hospital stay. Methods: We used PGE1 gel prepared from tablets and administered in the ambulatory form (group 1), the same PGE1 gel administered in the labor room (group 2) and intravenously administered oxytocin in the labor room (group 3) for the induction of abortus in women complicated with intrauterine fetus death and missed abortion. Patients requesting abortion were eligible for inclusion, with >8 and <13 weeks of gestation. Eighty-nine women with unfavorable cervixes (Bishop score  $\leq 4$ ) were included in this study. Comparisons between the three groups for such variables were done by ANOVA. Results: The statistical test did reveal significant differences in the cervical changes, doses of PGE1 used and maternal labor stay between the three groups. The difference in effect on cervical ripening was seen following PGE1 application in both of these groups, but no difference was seen with the oxytocin use. Cervical score changed in 100% of both groups with the PGE1 gel and 89.6% of the group with oxytocin use, within 6 days in the latter group. The mean number of days of maternal labor stay were 1.5, 4.6 and 6.2 respectively. There was no difference regarding the effect on clinical characteristics of the women on the final Bishop score. The number, initial and final Bishop score, vaginal bleeding and other complications were not different. Conclusions: Duration of hospital stay may be decreased by applying PGE1 gel in an ambulatory setting when compared to in-hospital PGE1 gel applications or intravenous oxytocin infusion for cervical ripening. Further research is necessary to determine the safety of PGE1 gel application for preabortion cervical ripening prior to surgical abortion. Copyright © 2003 S. Karger AG, Basel.

**Database:** EMBASE



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**12. Extra-amniotic prostaglandin E2 for midtrimester termination of pregnancy in live fetuses vs. fetal demise.**

**Author(s):** Debby, A; Sagiv, R; Girtler, O; Sadan, O; Glezerman, M; Golan, A

**Source:** Archives of gynecology and obstetrics; Oct 2003; vol. 268 (no. 4); p. 301-303

**Publication Date:** Oct 2003

**Publication Type(s):** Comparative Study Journal Article

**PubMedID:** 14504874

Available at [Archives of gynecology and obstetrics](#) - from SpringerLink

**Abstract:** This study compared the course of midtrimester termination of pregnancies with fetal demise and those with a viable fetuses by extra-amniotic prostaglandin (PG) E(2). A total of 275 women who underwent second trimester abortion with extra-amniotic PGE2(2) were divided into two groups: 95 patients (35%) with fetal demise and 180 women (65%) with a live fetuses. Extra-amniotic PGE2(2) was administered in doses of 200 micro g every 2 h up to 20 doses. Bumm curettage was performed in the majority of the patients. We compared the duration and complication rate between the groups. The median induction to abortion interval was significantly shorter in the fetal demise group (13 vs. 21 h) than in the live fetus group. Mean gestational ages and complication rates were similar. Midtrimester termination of pregnancy with extra-amniotic PGE2(2) is a safe method with a low complication rate. In cases of pregnancy with fetal demise extra-amniotic PGE2(2) is associated with a significantly shorter induction to abortion interval than with a live fetus.

**Database:** Medline

**13. Low dose sulprostone for termination of second and third trimester pregnancies.**

**Author(s):** de Boer, M A; van Gemund, N; Scherjon, S A; Kanhai, H H

**Source:** European journal of obstetrics, gynecology, and reproductive biology; Dec 2001; vol. 99 (no. 2); p. 244-248

**Publication Date:** Dec 2001

**Publication Type(s):** Journal Article

**PubMedID:** 11788180

**Abstract:** OBJECTIVE The purpose of this study is to assess the effectiveness and safety of sulprostone (nalador) for labour induction in the event of foetal death or foetal malformations. STUDY DESIGN Retrospective analysis of 284 women with intrauterine foetal death (n=137), or foetal abnormalities (n=147), who underwent labour induction with sulprostone in a continuous dose of 1 microg/min intravenously. RESULTS All but three women had a successful vaginal delivery. The median induction-expulsion interval was significantly shorter (12h) in the foetal death group compared to the foetal malformation group (25h). Two uterine ruptures were recorded, one in a woman with a uterine anomaly, and one in a woman with a previous caesarean section. There were no other complications. Gestational age had a significant influence on spontaneous expulsion of the placenta: before 24 weeks 55%, and after 24 weeks 82% spontaneous expulsion. For the chance of a neonate born with signs of life, parity was the only significant determinant. CONCLUSION The use of intravenous sulprostone in a low continuous dose is both effective and safe. In addition, this study does not support former opinions that smoking and advanced maternal age are contraindications.

**Database:** Medline



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#### **14. Comparison of misoprostol and dinoprost administration for the induction of labour in second trimester pregnancies in cases of intrauterine fetal loss**

**Author(s):** Kara M.; Ozden S.; Eroglu M.; Cetin A.; Arioglu P.

**Source:** Italian Journal of Gynaecology and Obstetrics; 1999; vol. 11 (no. 1); p. 13-16

**Publication Date:** 1999

**Publication Type(s):** Article

**Abstract:**Objective: This study was performed to compare the safety and effectiveness of intravaginal misoprostol (Prostaglandin E1) and intracervical dinoprost (Prostaglandin E2) for termination of second trimester pregnancies with fetal death. Methods: The study was conducted prospectively on 65 randomly selected singleton pregnancies whose fetuses had died. Dinoprost (0.5 mg) was applied intracervically to 32 cases, and misoprostol (200 mg) was applied intravaginally to 33 patients. Results: The mean induction-abortion interval was found to be significantly shorter in the misoprostol group than the dinoprost group (321 +/- 129.3 min NS 748.1 +/- 455.3 min,  $p = 0.0001$ ). The complete abortion rate was 87.5% in the misoprostol group and 60.6% in the dinoprost group ( $p = 0.01$ ). Rates of side effects or complications were not different between the two groups. Conclusions: We conclude that misoprostol is significantly more effective, cheaper and safer for the termination of second trimester pregnancies with fetal death than dinoprost.

**Database:** EMBASE

#### **15. Termination of second trimester pregnancy: Comparison of prostaglandin vaginal pessaries vs Foley's catheter insertion**

**Author(s):** Sachdev P.S.

**Source:** Journal of the College of Physicians and Surgeons Pakistan; 1999; vol. 9 (no. 9); p. 400-402

**Publication Date:** 1999

**Publication Type(s):** Article

**Abstract:**A randomized retrospective study was conducted at Liaquat Medical College Hospital and Agha Khan Maternal Child Care Centre, Hyderabad, Pakistan comparing PGE2 vaginal pessaries versus foley's catheter (balloon insertion) used for termination of 2nd trimester pregnancy (14-28 weeks) in two groups of patients. All 70 patients included in study had either intrauterine fetal death or congenital malformations not compatible with life and a cervical score between 0 to 4. In one group (40 patients) PGE2 vaginal pessaries (maximum number of pessaries five) were used and in the other group (30 patients) was Foley's catheter balloon insertion was done. It was observed that Foley's catheter was more effective in 'achieving abortion (mean time interval between induction and termination of pregnancy was 26.3+/-8.2 hours with Foley's and 32.17+/-9.72 hours with PGE2,  $P < 0.01$ ) and has additional advantage of being inexpensive with minimum side effects.

**Database:** EMBASE



**16. Extra-amniotic prostaglandin-E2 for termination in the second and early third trimesters.**

**Author(s):** Rouzi, A A; Hawasawi, H; Abduljabbar, H

**Source:** International journal of gynaecology and obstetrics: the official organ of the International Federation of Gynaecology and Obstetrics; Oct 1999; vol. 67 (no. 1); p. 45-46

**Publication Date:** Oct 1999

**Publication Type(s):** Journal Article

**PubMedID:** 10576240

Available at [International journal of gynaecology and obstetrics: the official organ of the International Federation of Gynaecology and Obstetrics](#) - from Wiley Online Library Science , Technology and Medicine Collection 2017

**Database:** Medline

**17. Comparison of intra-amniotic (15S)-15-methyl-PGF2 alpha and intravaginal prostaglandin E2 for second-trimester uterine evacuation**

**Author(s):** Perry Jr. K.G.; Roberts W.E.; Martin R.W.; Magann E.F.; Sullivan D.L.; Morrison J.C.

**Source:** Journal of perinatology : official journal of the California Perinatal Association; 1998; vol. 18 (no. 1); p. 24-27

**Publication Date:** 1998

**Publication Type(s):** Article

**PubMedID:** 9527940

**Abstract:**OBJECTIVE: To compare the efficacy, safety, and side effects of intra-amniotic (15S)-15-methyl prostaglandin F2 alpha (15-M-PGF2 alpha) and intravaginal prostaglandin E2 (PGE2) for midtrimester uterine evacuation. STUDY DESIGN: Ninety-three patients underwent therapeutic midtrimester pregnancy termination by the use of laminaria placement and intra-amniotic injection of 15-M-PGF2 alpha. A matched control group underwent uterine evacuation by laminaria placement and insertion of PGE2 intravaginal suppositories. The main outcomes studied were time to delivery, side effects, and complications. RESULTS: The 15-M-PGF2 alpha group had a shorter time to delivery (12.3 +/- 6.4 hours) compared with the PGE2 group (16.2 +/- 6.6 hours,  $p < 0.0001$ ). The evacuation rate over time was significantly greater in the 15-M-PGF2 alpha group ( $p = 0.001$ ). The PGE2 group had a significantly higher incidence of side effects. CONCLUSIONS: The use of intra-amniotic 15-M-PGF2 alpha for therapeutic second-trimester pregnancy termination is safe and is associated with a more rapid evacuation of the uterus and fewer side effects than intravaginal PGF2 suppositories.

**Database:** EMBASE



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**18. Comparison between intravenous prostaglandin E2 and extraamniotic prostaglandin F(2alpha) instillation for termination in second-trimester pregnancy**

**Author(s):** Lee C.-N.; Cheng W.-F.; Lai H.-L.; Shyu M.-K.; Chen T.-M.; Wu R.-T.; Shih J.-C.; Hsieh F.-J.

**Source:** Journal of Maternal-Fetal Investigation; 1998; vol. 8 (no. 3); p. 134-138

**Publication Date:** 1998

**Publication Type(s):** Article

**Abstract:**Objective: To evaluate the efficacy and safety of two different methods, intravenous prostaglandin E2 and extraamniotic prostaglandin F(2alpha) instillation, in second-trimester pregnancy termination. Methods: We designed a prospective randomized longitudinal study. 130 consecutive patients with various indications for second-trimester pregnancy termination were recruited. Patients were managed randomly with either intravenous continuous prostaglandin E2 infusion or extraamniotic prostaglandin F(2alpha) instillation. Laminaria were inserted in patients with unfavorable cervixes. The instillation-abortion time, success rate within 24 hours, dosage of both medications, and side effects were recorded and analyzed. Results: There was a significantly shorter instillation-abortion time (11.85 +/- 9.65 versus 22.18 +/- 16.83 hours,  $P < 0.001$ ), higher complete abortion rate (71.91% versus 41.5%,  $P = 0.013$ ), and a higher rate of successful abortion within 24 hours (87.6% versus 56.1%,  $P < 0.001$ ) in patients treated with intravenous prostaglandin E2 than in those with extraamniotic prostaglandin F(2alpha). Conclusions: Prostaglandin E2 had a higher rate of successful abortion and fewer side effects than prostaglandin F(2alpha). This implies that intravenous prostaglandin E2 might be a better choice for second-trimester pregnancy termination compared with extraamniotic prostaglandin F(2alpha).

**Database:** EMBASE

**19. Midtrimester pregnancy termination for fetal malformations. Use of intravaginal prostaglandin E2.**

**Author(s):** Hagar, D L; Valley, M T; Rayburn, W F; Carey, J C

**Source:** The Journal of reproductive medicine; Aug 1997; vol. 42 (no. 8); p. 497-500

**Publication Date:** Aug 1997

**Publication Type(s):** Journal Article

**PubMedID:** 9284011

**Abstract:**OBJECTIVETo compare outcome differences and responses to treatment in pregnancies complicated by either major fetal malformations or previous fetal death in the second trimester.STUDY DESIGNData were analyzed from a computerized perinatal database and individual hospital records for singleton gestations between 14 and 23 weeks undergoing labor induction with prostaglandin E2 (PGE2) suppositories (20 mg intravaginally every three to five hours).RESULTSBetween January 1993 and June 1995, 65 pregnancies underwent induction of labor for either a lethal fetal malformation (38) or death (27). As compared with the fetal death group, the malformation group required more suppositories (median 4, range 1-10, versus median 3, range 1-6;  $P < .05$ ) and needed a greater total dosage (77.5 +/- 38.5 mg versus 61.8 +/- 37.8 mg,  $P < .05$ ). The mean time from initiation of treatment until delivery was two hours longer in the malformation group. There were no significant differences between the two treatment groups in incidence of maternal side effects or of retained placentas requiring operative intervention.CONCLUSIONPatients who undergo second-trimester induction of labor for major fetal malformations using intravaginal



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PGE2 should be counseled that the dosage of the drug is greater and that labor may last longer than in pregnancies complicated by a previous fetal death.

**Database:** Medline

**20. Induction of labour with intravaginal misoprostol versus dinoprostone in intrauterine death: A retrospective study**

**Author(s):** Fletcher H.M.; Wharfe G.; Simeon D.; Mitchell S.; Brown D.

**Source:** Journal of Obstetrics and Gynaecology; 1996; vol. 16 (no. 3); p. 155-158

**Publication Date:** 1996

**Publication Type(s):** Article

**Abstract:**Between March 1992 and November 1994, 48 patients with intrauterine death had labour induced, 36 with the prostaglandin analogue misoprostol and 12 with the prostaglandin dinoprostone. Both were used as a single dose in 24 hours intravaginally. The patients were all of low parity and all but one were in the third trimester. Of those getting misoprostol, 92 per cent, and of those getting dinoprostone, 67 per cent, went into spontaneous labour. Eighty-one per cent of those getting misoprostol and 67 per cent of those getting dinoprostone delivered within 24 hours without the need for further prostaglandin or oxytocin, a difference that was not significant. No differences were found in other outcome variables such as diagnosis or induction to delivery time or need for oxytocin, between the two groups. Only one maternal medical complication occurred, chorioamnionitis in a patient who had misoprostol, and in whom labour was delayed 6 days.

**Database:** EMBASE

**21. The use of gemeprost for induction of labour after intrauterine death in the third trimester**

**Author(s):** Mould T.A.J.; Rodgers M.E.; De Courcy-Wheeler R.; Byrne D.L.

**Source:** Journal of Obstetrics and Gynaecology; 1996; vol. 16 (no. 6); p. 468-473

**Publication Date:** 1996

**Publication Type(s):** Article

**Abstract:**A retrospective review of induction of labour after singleton fetal death in the third trimester was carried out, with particular interest: in the use, efficacy and incidence of side-effects of 16,16-dimethyl-trans-D2 prostaglandin E1 methyl ester, Gemeprost. In the 147 cases studied, gemeprost was the commonest induction agent used (43 women) with prostin E2 vaginal gel the next most common (35 women). The efficacy of gemeprost was slightly less than prostin (88.3 per cent versus 91.4 per cent successful induction) but gemeprost had a significantly shorter induction to delivery time. It was also less invasive requiring artificial rupture of membranes and syntocinon significantly less often. There were three ruptured uteri, one each in the gemeprost and prostin groups and one out of the 40 spontaneously labouring women. This suggests that monitoring of uterine contractions is important despite the demise of the fetus, that cervical preparation with mifepristone should be considered and that the second trimester dose of gemeprost may be too high for third trimester induction.

**Database:** EMBASE



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## 22. Second trimester pregnancy termination including fetal death: comparison of five different methods.

**Author(s):** Yapar, E G; Senöz, S; Urkütür, M; Batioglu, S; Gökmen, O

**Source:** European journal of obstetrics, gynecology, and reproductive biology; Nov 1996; vol. 69 (no. 2); p. 97-102

**Publication Date:** Nov 1996

**Publication Type(s):** Comparative Study Randomized Controlled Trial Clinical Trial Journal Article

**PubMedID:** 8902440

**Abstract:**OBJECTIVETo compare the efficacy of methods for second trimester pregnancy termination.METHODSA prospective randomized study of women undergoing pregnancy termination between 14 and 28 weeks gestation. Three hundred and forty patients with poor cervical condition (Bishop score  $\leq 4$ ) in whom one of five termination methods were used were assessed: (i) extraamniotic administration of ethacridine lactate (82 patients); (ii) intracervical prostaglandin (PG) E2 gel (100 patients); (iii) intravenous infusion of concentrated oxytocin (36 patients); (iv) vaginal misoprostol (49 patients); and (v) balloon insertion (73 patients). Oxytocin infusion was used in all but concentrated oxytocin group to augment labor, when necessary. Patients in whom effective uterine contractions and cervical dilatation was not obtained within 48 h with the primary termination method were registered as failures.RESULTSThe efficacy of each method were evaluated in terms of abortion within time. Abortion within 48 h were achieved in 98.8% (81/82) of the patients in ethacridine group; 97.3% (35/36) of the patients in concentrated oxytocin group; 90.0% (90/100) of the patients in PGE2 group; 97.2% (71/73) of the patients in balloon group; 77.5% (38/49) of the patients in misoprostol group ( $P = 0.000$ ,  $P < 0.01$ , Wilcoxon (Gehan) statistic). The overall median induction-abortion interval  $\pm$  S.D. (in h) in each group were as follows: ethacridine lactate: 15.7  $\pm$  9.6, PGE2 gel: 20.0  $\pm$  14.5, concentrated oxytocin: 12.2  $\pm$  14.4, misoprostol: 24.0  $\pm$  22.2, balloon: 16.0  $\pm$  15.4 (one way ANOVA,  $P = 0.003$ ,  $P < 0.01$ ).CONCLUSIONIn comparison with the five methods, the use of extraamniotic ethacridine, intravenous concentrated oxytocin, and balloon was found to provide more effective treatment than intracervical PGE2 and misoprostol in terms of achievement of abortion within 24 and 48 h.

**Database:** Medline

## 23. Concentrated oxytocin plus low-dose prostaglandin E2 compared with prostaglandin E2 vaginal suppositories for second-trimester pregnancy termination

**Author(s):** Owen J.; Hauth J.C.

**Source:** Obstetrics and Gynecology; Jul 1996; vol. 88 (no. 1); p. 110-113

**Publication Date:** Jul 1996

**Publication Type(s):** Article

**PubMedID:** 8684741

Available at [Obstetrics and Gynecology](#) - from Ovid (LWW Total Access Collection 2015 - Q1 with Neurology)

**Abstract:**Objective: To examine the efficacy and side effects of concentrated oxytocin plus low-dose prostaglandin (PG) E2 compared with a standard dose of vaginal PGE2 for second-trimester pregnancy termination. Methods: Patients with obstetric or fetal complications were randomly assigned to receive either a 20-mg PGE2 vaginal suppository every 4 hours ( $n = 81$ ) or a concentrated



oxytocin infusion plus a 10-mg PGE2 vaginal suppository every 6 hours (n = 73). Treatment success was defined as delivery (or imminent delivery) within 24 hours of therapy. Women who failed their assigned regimen were crossed to the alternate method. Results: Indications for delivery were similar in the two groups. The success rate with oxytocin was 89%, compared with 81% with vaginal PGE2 (relative risk 0.92, 95% confidence interval 0.8- 1.04; P = .2). Maternal fever (P < .001), nausea (P = .02), and vomiting (P = .003) occurred significantly more often in women who received a 20-mg PGE2 vaginal suppository every 4 hours. Conclusion: Concentrated oxytocin plus low-dose PGE2 should be considered as an alternative to vaginal PGE2 for indicated second-trimester pregnancy termination.

**Database:** EMBASE

#### **24. Termination of pathological pregnancy in second and early third trimesters with extraamniotic instillation of 16-phenoxy-omega-tetranor prostaglandin E2 methylsulfonylamide**

**Author(s):** Hwang S.F.; Chou M.M.; Ho E.S.C.

**Source:** International Journal of Gynecology and Obstetrics; 1994; vol. 47 (no. 2); p. 157-161

**Publication Date:** 1994

**Publication Type(s):** Article

**PubMedID:** 7843486

**Abstract:** Objectives: To evaluate the efficacy, safety and influence on subsequent fertility of sulprostone, a prostaglandin E2 analog, in terminating pathological pregnancies via the extraamniotic route. Methods: Forty pregnant women with intrauterine fetal death or major congenital anomalies were enrolled. Sulprostone was instilled into the extraamniotic space through a silicon Foley catheter. The instillation rate was 0.5-1 mug/min. Instillation was discontinued when the catheter was expelled or when rupture of the membranes occurred. The duration of instillation and the time interval to completion of abortion was recorded. Information about subsequent fertility was collected by telephone or at outpatient clinic visits. Results: The mean duration of instillation was 7.0 h and the mean dose of sulprostone was 314.8 mug. The mean induction-to-abortion interval (IAI) was 17.0 h. In two of the 40 patients, the cervix was not adequately ripened after 48 h and these pregnancies were ultimately terminated by alternative methods. The success rate of termination in 48 h was 92.5% (37/40). No severe side effects were encountered. Conclusion: To the best of our knowledge, this is the first report in the English literature of administration of sulprostone by extraamniotic instillation for termination of pathological pregnancies. The method is effective and safe and has an insignificant influence on subsequent fertility.

**Database:** EMBASE



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**25. A comparison of intravaginal misoprostol with prostaglandin E2 for termination of second-trimester pregnancy.**

**Author(s):** Jain, J K; Mishell, D R

**Source:** The New England journal of medicine; Aug 1994; vol. 331 (no. 5); p. 290-293

**Publication Date:** Aug 1994

**Publication Type(s):** Comparative Study Randomized Controlled Trial Clinical Trial Journal Article

**PubMedID:** 8022438

Available at [The New England journal of medicine](#) - from Massachusetts Medical Society Please select "Login via Athens or your institution" and enter your OpenAthens username and password.

Available at [The New England journal of medicine](#) - from ProQuest (Health Research Premium) - NHS Version

**Abstract:**BACKGROUNDThe most widely used medical method of terminating second-trimester pregnancy is the intravaginal administration of prostaglandin E2 (dinoprostone [PGE2]). This treatment is highly effective but is associated with severe gastrointestinal side effects and hyperpyrexia.METHODSWe conducted a prospective, randomized trial comparing the efficacy and safety of misoprostol, a prostaglandin E1 analogue (200 micrograms intravaginally every 12 hours), with the efficacy and safety of PGE2 (20 mg intravaginally every 3 hours). The study population included 55 pregnant women between 12 and 22 weeks' gestation who were undergoing termination of pregnancy for either intrauterine fetal death (37 women) or medical or genetic reasons (18 women).RESULTSThe rate of successful abortions within 24 hours was 81 percent (22 of 27 women) with PGE2 and 89 percent (25 of 28 women) with misoprostol ( $P = 0.47$ ). All the women who received misoprostol had successful abortions within 38 hours. Among those who had an abortion within 24 hours, the mean interval from treatment to abortion was similar in both groups (10.6 hours with PGE2 and 12.0 hours with misoprostol,  $P = 0.33$ ). The rate of complete abortion, defined as the passage of the fetus and the placenta simultaneously, was 32 percent for PGE2 and 43 percent for misoprostol ( $P = 0.56$ ). Certain side effects were more frequent in the women receiving PGE2 than in those receiving misoprostol: pyrexia (63 percent vs. 11 percent;  $P < 0.001$ ), uterine pain (67 percent vs. 57 percent,  $P = 0.58$ ), vomiting (33 percent vs. 4 percent,  $P = 0.005$ ), and diarrhea (30 percent vs. 4 percent,  $P = 0.012$ ). The average cost per treatment was \$315.30 for PGE2, as compared with \$0.97 for misoprostol.CONCLUSIONSMisoprostol is at least as effective as PGE2 for the termination of second-trimester pregnancy involving either a dead or a living fetus, but it is less costly, is easier to administer, and is associated with fewer adverse effects.

**Database:** Medline





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**26. Evaluation of the cervical conditions with PGE2 in first and second trimester.**

**Author(s):** Su, S L; Cheng, B H; Lee, J N

**Source:** Gaoxiong yi xue ke xue za zhi = The Kaohsiung journal of medical sciences; Jun 1994; vol. 10 (no. 6); p. 272-278

**Publication Date:** Jun 1994

**Publication Type(s):** Journal Article

**PubMedID:** 8057409

**Abstract:**The PGE2 vaginal tablet has been introduced for use in term pregnancy. However, its effect in abortion and intrauterine fetal death (IUFD) is still uncertain. So we set up the following processes to research the efficacy of PGE2 in abortion and IUFD. We used PGE2 (3 mg) intravaginally for 12 hours in the patients of the first trimester. Consequently, the induction was achieved in a much shorter period. On the other hand, for patients in the second trimester, we used PGE2 (3 mg) in posterior fornix for 12 hours and PGE2 (1.5 mg) in extra-amnion successively. As a result, the cervical condition ripened more satisfactorily. The time of induction was about 14 to 18 hours in the second trimester, much shorter than the usual time needed. Besides, patients didn't complain of any special symptoms/signs such as nausea, vomiting, diarrhea, tachycardia, or hypertension. Therefore, we prefer to use this method for induction of the first & second trimester pregnancy including IUFD and abortion.

**Database:** Medline

**27. Comparison of extra-amniotic prostaglandin F(2alpha) and dinoprostone use for labour induction after second trimester intra-uterine fetal death**

**Author(s):** Salamalekis E.; Loghis C.; Kassanos D.; Traka A.; Zourlas P.A.

**Source:** Journal of Obstetrics and Gynaecology; 1992; vol. 12 (no. 2); p. 118-119

**Publication Date:** 1992

**Publication Type(s):** Article

**Database:** EMBASE



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**28. Uterine rupture after induction of labour for intrauterine death using the prostaglandin E2 analogue sulprostone.**

**Author(s):** Prasad, R N; Ratnam, S S

**Source:** The Australian & New Zealand journal of obstetrics & gynaecology; Aug 1992; vol. 32 (no. 3); p. 282-283

**Publication Date:** Aug 1992

**Publication Type(s):** Case Reports Journal Article Review

**PubMedID:** 1445147

Available at [The Australian & New Zealand journal of obstetrics & gynaecology](#) - from Patricia Bowen Library & Knowledge Service West Middlesex University Hospital NHS Trust (lib302631) Local Print Collection [location] : Patricia Bowen Library and Knowledge Service West Middlesex university Hospital.

**Database:** Medline

**29. Management of intra-uterine fetal death with vaginal administration of gemeprost or prostaglandin E2 A random allocation controlled trial**

**Author(s):** Hill N.C.W.; Selinger M.; Ferguson J.; MacKenzie I.Z.

**Source:** Journal of Obstetrics and Gynaecology; 1991; vol. 11 (no. 6); p. 422-426

**Publication Date:** 1991

**Publication Type(s):** Article

**Abstract:** Sixty-nine patients with a confirmed intra-uterine fetal death in the second or third trimester of pregnancy were allocated at random to receive the prostaglandin E1 analogue gemeprost, 1 mg vaginally three hourly for three doses, or a single vaginal insertion of prostaglandin E2 25 mg as a pessary or as a gel. Intravenous oxytocin was given 15-20 h later if necessary. All pregnancies were successfully expelled using each of the three regimens employed. There were no differences between the induction expulsion intervals between the three groups: the median interval for all the patients was 14.4 +/- 9.6 h (s.d.). Delivery within 24 h of prostaglandin treatment occurred in 16/20 of the gemeprost patients and 20/27 and 19/22 respectively in the prostaglandin E2 pessary and gel groups. There were no differences in the incidences of gastrointestinal side effects or analgesic requirements between the three groups. Overall 17/69 patients required surgical evacuation of the uterus for immediate incomplete abortion, but none of these occurred after 28 weeks gestational age. The vaginal administration of gemeprost or prostaglandin E2 provides a safe, effective, easy to administer alternative to extra-amniotic treatment in pregnancies complicated by intra-uterine fetal death.

**Database:** EMBASE



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### **30. Mid-second-trimester labor induction: Concentrated oxytocin compared with prostaglandin E2 vaginal suppositories**

**Author(s):** Winkler C.L.; Gray S.E.; Hauth J.C.; Owen J.; Tucker J.M.

**Source:** Obstetrics and Gynecology; 1991; vol. 77 (no. 2); p. 297-300

**Publication Date:** 1991

**Publication Type(s):** Article

**PubMedID:** 1988897

**Abstract:** A concentrated oxytocin infusion and prostaglandin E2 (PGE2) vaginal suppositories were compared in a retrospective analysis for indicated abortion in the mid-second trimester (17-24 weeks' gestation). Eighty-one women underwent second-trimester pregnancy termination, 59 by PGE2 suppositories and 22 by concentrated oxytocin infusion. Success was achieved by PGE2 in 93% (55 of 59) and oxytocin in 91% (20 of 22). The mean duration of labor was 13.1 hours with PGE2 and 8.2 hours with oxytocin. The mean dose of PGE2 was 65.2 mg; of oxytocin, 200 units. Women who received PGE2 experienced nausea (46%), vomiting (37%), fever (64%), and diarrhea (20%) despite appropriate premedication. Few side effects occurred in the women who were treated with oxytocin. We conclude that concentrated oxytocin infusion seems to be a reasonable alternative to PGE2 vaginal suppositories for induction of labor in the mid-second trimester.

**Database:** EMBASE

### **31. Intra-cervical prostaglandin E2 gel in management of dead fetus in utero.**

**Author(s):** Herabutya, Y; O-Prasertsawat, P

**Source:** Asia-Oceania journal of obstetrics and gynaecology; Dec 1991; vol. 17 (no. 4); p. 335-339

**Publication Date:** Dec 1991

**Publication Type(s):** Journal Article

**PubMedID:** 1801679

**Abstract:** During a two and a half year period at this institution, prostaglandin E2 gel was administered intra-cervically in the treatment of 74 cases of dead fetus in utero. Delivery was achieved in all 74 cases. The mean interval from induction to delivery of the fetus was 17.6 hours with a mean total dosage used of 5.2 mg. Seventy percent of the patients spontaneously expelled the fetus and placenta completely. Gastrointestinal side-effects were minimal with no medication needed. Oxytocin was used in 17 (23%) patients mainly to expedite the expulsion of the fetus. Intra-cervical administration appeared to result in fewer side-effects and was more cost effective than vaginal prostaglandin therapy for the treatment of dead fetus.

**Database:** Medline



**32. Induction of labor in intrauterine fetal death with 16-phenoxy-prostaglandin-E2-methylsulfonylamide (sulprostone)--effects on uterine contractility, coagulation and kallikrein-kinin systems.**

**Author(s):** Laudański, T; Litorowicz, A; Akerlund, M

**Source:** Gynecologic and obstetric investigation; 1990; vol. 29 (no. 4); p. 269-272

**Publication Date:** 1990

**Publication Type(s):** Research Support, Non-u.s. Gov't Journal Article

**PubMedID:** 2361635

**Abstract:**Thirty-two patients with intrauterine fetal death after the 20th week of pregnancy were treated with 1-3 intramuscular injections of 500 mg of 16-phenoxy-PGE2-methylsulfonylamide (sulprostone). Intrauterine pressure records demonstrated onset of contractions within 20 min of injection and all women aborted-delivered after in mean 11 h (4-31 h). No effect on routine hematologic and plasma parameters, kallikrein-kinin and factor XII systems was observed. It is concluded that 16-phenoxy-PGE2-methylsulfonylamide is an effective and safe oxytocic agent for the induction of labor in case of intrauterine fetal death with minimal effects on the coagulation system.

**Database:** Medline

**33. Extra-amniotic prostaglandin induction of labour supplemented with intravenous oxytocin following fetal death in utero**

**Author(s):** Kehoe S.; Mylotte M.J.M.

**Source:** Irish Journal of Medical Science; 1990; vol. 159 (no. 9); p. 278-279

**Publication Date:** 1990

**Publication Type(s):** Article

**PubMedID:** 2094693

Available at [Irish Journal of Medical Science](#) - from SpringerLink

**Database:** EMBASE



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### 34. Management of intrauterine fetal death after 12 weeks of gestation: Comparison of two prostaglandins

**Author(s):** Kidess E.A.; Ba'Aqeel H.S.

**Source:** Annals of Saudi Medicine; 1990; vol. 10 (no. 4); p. 403-406

**Publication Date:** 1990

**Publication Type(s):** Article

Available at [Annals of Saudi Medicine](#) - from Unpaywall

**Abstract:** The efficacy of the uteroselective prostaglandin analogue 16-phenoxy-w-tetranor PGE2 methylsulfonylamide (sulprostone) given intramuscularly was studied in 18 patients who had had intrauterine fetal death after 12 weeks of gestation and the results compared with those of the widely used 15-methyl PGE2 analogue (dinoprostone) which was given as vaginal tablets to 17 patients. Expulsion of the uterine contents in the sulprostone group was successful in 100% of the cases at all stages of gestation but was achieved in only 29% of the dinoprostone group ( $P < 0.001$ ), mostly in those who were beyond their 28th week of gestation. The mean time that elapsed between induction and expulsion was 10.7 hours for sulprostone and 37.9 hours for dinoprostone ( $P < 0.001$ ). Complete expulsion occurred in 39% of the patients given sulprostone and in 80% of the patients given dinoprostone ( $P = 0.3$ ). In addition to its demonstrated efficacy, sulprostone does not require vaginal manipulations, which is desirable in a culture where patients are reluctant to submit to vaginal procedures.

**Database:** EMBASE

### 35. New technique for managing second trimester intrauterine fetal death

**Author(s):** Malpani A.; Krishna U.

**Source:** International Journal of Gynecology and Obstetrics; 1989; vol. 28 (no. 3); p. 295-297

**Publication Date:** 1989

**Publication Type(s):** Article

**PubMedID:** 2564363

**Abstract:** In this study, a new method for terminating second trimester pregnancies complicated by intrauterine fetal death is analysed. The technique consisted of a combination of extraamniotic ethacridine lactate with intramuscular sulprostone (16-phenoxy-omega-17,18,19,20 tetranor PGE2 methyl sulfonylamide). Objective documentation of the efficacy of this method was obtained by continuous monitoring of intrauterine pressure in two patients. The method was found to be simple, safe, cheap and effective and deserves increased acceptance.

**Database:** EMBASE



**36. Comparison of the Foley catheter and dinoprostone pessary for cervical preparation before second trimester abortion**

**Author(s):** Hackett G.A.; Reginald P.; Paintin D.B.

**Source:** British Journal of Obstetrics and Gynaecology; 1989; vol. 96 (no. 12); p. 1432-1434

**Publication Date:** 1989

**Publication Type(s):** Article

**PubMedID:** 2620055

**Abstract:** The Foley catheter and a 3 mg dinoprostone pessary (Prostin E2) were compared as methods for cervical preparation before second trimester dilatation and evacuation. The catheter was well tolerated and provided significantly greater change in cervical dilatation and improved cervical compliance. The Foley catheter would seem to provide a readily available and efficacious means of cervical preparation.

**Database:** EMBASE

**37. Induction of labour after fetal death: a randomized controlled trial of two prostaglandin regimens.**

**Author(s):** Kanhai, H H; Keirse, M J

**Source:** British journal of obstetrics and gynaecology; Dec 1989; vol. 96 (no. 12); p. 1400-1404

**Publication Date:** Dec 1989

**Publication Type(s):** Randomized Controlled Trial Clinical Trial Journal Article

**PubMedID:** 2695155

**Abstract:** A total of 85 women with antepartum fetal death between 14 and 42 weeks gestation was randomly assigned to one of two regimens of intravenous infusion of the prostaglandin analogue 16-phenoxo-17, 18, 19, 20-tetranor-PGE2-methylsulphonamide (sulprostone) for inducing labour. Women received either 1 microgram/min until delivery or the commonly recommended treatment of 1500 micrograms in 8 h followed by another, identical course of treatment if delivery did not occur within 24 h. The 1 microgram/min dose schedule used half the amount of prostaglandin and resulted in statistically significantly fewer gastrointestinal side-effects compared with the conventional treatment. All women were delivered vaginally and there were no differences in induction-to-delivery intervals between the two treatments. Sulprostone infused at a rate of 1 microgram/min resulted in a 50% chance of being delivered within 12 h and a 90% chance of being delivered within 24 h, with an overall frequency of side-effects of 20%.

**Database:** Medline



**38. Use of prostaglandin E2 vaginal suppositories in third-trimester fetal demise.**

**Author(s):** Martin, R W; Helman, N S; Martin, J N; Morrison, J C

**Source:** International journal of gynaecology and obstetrics: the official organ of the International Federation of Gynaecology and Obstetrics; Jul 1989; vol. 29 (no. 3); p. 269-271

**Publication Date:** Jul 1989

**Publication Type(s):** Research Support, Non-u.s. Gov't Journal Article

**PubMedID:** 2569427

**Abstract:** A retrospective analysis of eight cases of third-trimester fetal demise managed with prostaglandin E2 vaginal suppositories (PGE2) is presented. Management included laminaria insertion prior to induction and an initial lower dosage of PGE2. No cases of uterine rupture or cervicovaginal lacerations were encountered. A summary of the literature as it relates to PGE2 vaginal suppository use in third-trimester fetal demise is included.

**Database:** Medline

**39. Prostaglandin E2 induction of abortion and fetal demise.**

**Author(s):** Wiley, T L; Poole, C P; Gookin, K S; Wiser, W L; Morrison, J C

**Source:** International journal of gynaecology and obstetrics: the official organ of the International Federation of Gynaecology and Obstetrics; Feb 1989; vol. 28 (no. 2); p. 171-175

**Publication Date:** Feb 1989

**Publication Type(s):** Research Support, Non-u.s. Gov't Journal Article

**PubMedID:** 2563705

**Abstract:** Prostaglandin E2 (PGE2) suppositories have been shown to be active contractile agents and are effective in uterine evacuation for mid-trimester abortion or fetal demise. In this study, 85 patients were treated with vaginal PGE2 suppositories. When laminaria were used in patients with closed cervices, and compared to those who had minimal cervical dilatation, there was no difference in the time from induction to expulsion. Ninety-three percent of the 85 patients aborted successfully within 24 h. In each of the seven "failures", three or less suppositories were used prior to a dilatation and evacuation procedure. In this study, 81% of the abortions were complete, and in one-third of the remaining patients dilatation and curettage was performed just after delivery of the fetus. The incidence of minor side-effects ranged from 12 to 21%, and there were no major complications. It is concluded that the use of vaginal prostaglandin E2 suppositories for induction of mid-trimester abortion or fetal demise in the third trimester is safe and effective.

**Database:** Medline





**40. Labour induction with low-dose intravaginal prostaglandin E2 following intrauterine death.**

**Author(s):** O'Herlihy, C

**Source:** Irish journal of medical science; Feb 1986; vol. 155 (no. 2); p. 51-52

**Publication Date:** Feb 1986

**Publication Type(s):** Journal Article

**PubMedID:** 3457781

Available at [Irish journal of medical science](#) - from SpringerLink

**Database:** Medline

**41. Cervical ripening and induction of labor by intracervical and extra-amniotic prostaglandin gel application in cases of intrauterine fetal death.**

**Author(s):** Rath, W; Kuhn, W

**Source:** International journal of gynaecology and obstetrics: the official organ of the International Federation of Gynaecology and Obstetrics; Oct 1985; vol. 23 (no. 5); p. 387-394

**Publication Date:** Oct 1985

**Publication Type(s):** Comparative Study Journal Article

**PubMedID:** 2866989

**Abstract:** In 42 patients with intrauterine fetal death between the 29th and 43rd week of gestation, a standard, 2-step procedure was employed to deliver the dead fetus. After priming with an intracervical application of PGF2 alpha- or PGE2-gel, labor was induced by extra-amniotic prostaglandin (PG) gel or oxytocin infusion while under epidural anesthesia. Intracervical PG application led to a significant improvement in the modified Bishop score from 1.3 to 7.6 after a mean of 8 h. In 20 patients labor and progressive dilatation of the cervix occurred after intracervical PG gel application alone. The average total therapy time was 18.1 h in patients treated with PGF2 alpha and 13.7 h in the PGE2-treated group. The average induction of labor to delivery intervals were 8.8 h in the PGF2 alpha- and 7.1 h in the PGE2-group. Gastrointestinal side effects were observed in only 5 patients. The combination of cervical ripening with intracervical PG gel application and induction of labor by extra-amniotic PG gel under epidural anesthesia is an efficient and safe method for treatment of intrauterine fetal death.

**Database:** Medline



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**42. Safety and efficacy of vaginal prostaglandin E2 suppositories in the management of third-trimester fetal demise.**

**Author(s):** Kent, D R; Goldstein, A I; Linzey, E M

**Source:** The Journal of reproductive medicine; Feb 1984; vol. 29 (no. 2); p. 101-102

**Publication Date:** Feb 1984

**Publication Type(s):** Journal Article

**PubMedID:** 6584630

**Abstract:** Prostaglandin E2 vaginal suppositories are well established in the management of intrauterine fetal demise in the second trimester of pregnancy. However, approval for their use in the third trimester has been withheld pending evaluation of safety and efficacy. In this study 46 patients with intrauterine fetal demise in the third trimester were managed in a similar fashion except that only a 10-mg dose of prostaglandin E2 was employed. Forty-four of the 46 patients were delivered successfully. One patient experienced a cervical laceration that necessitated a hysterectomy; in her, oxytocin was used to supplement the prostaglandin. It appears that prostaglandin E2 vaginal suppositories can be used safely in the management of fetal demise in the third trimester of pregnancy. Use of a lower dose of the medication as well as tocodynamometry is recommended because the absorption of and sensitivity to this medication vary from patient to patient. The frequency of administering the medication should depend on the patient's response rather than on any given formula.

**Database:** Medline

**43. Intracervical instillation of PGE2-gel in patients with missed abortion or intrauterine fetal death.**

**Author(s):** Ekman, G; Uldbjerg, N; Wingerup, L; Ulmsten, U

**Source:** Archives of gynecology; 1983; vol. 233 (no. 4); p. 241-245

**Publication Date:** 1983

**Publication Type(s):** Journal Article

**PubMedID:** 6660917

**Abstract:** A single intracervical instillation of prostaglandin E2 (1.0 mg or 0.5 mg in viscous gel) was given to dilate the cervix before dilatation and evacuation in patients with missed abortion or intrauterine fetal death in late pregnancy. The 1.0-mg dose of PGE2 gave more prominent cervical dilatation in early pregnancy. In late pregnancy 1.0 mg PGE2 induced labor in the majority of patients and with shorter induction delivery time than in patients given 0.5 mg PGE2. There was no uterine hypertonus and no patients complained of gastrointestinal symptoms. We conclude that intracervical instillation of 1.0 mg of PGE2 in viscous gel is a safe and effective method both for dilating the cervix before dilatation and evacuation and as a method of inducing labor in patients with intrauterine fetal death.

**Database:** Medline



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**44. Delivery of the dead or malformed fetus.**

**Author(s):** Lawson, J

**Source:** Clinics in obstetrics and gynaecology; Dec 1982; vol. 9 (no. 3); p. 745-756

**Publication Date:** Dec 1982

**Publication Type(s):** Journal Article Review

**PubMedID:** 6756755

**Database:** Medline

**45. Termination of pregnancy in patients with missed abortion and intrauterine dead fetuses by a single intracervical application of prostaglandin E2 in viscous gel.**

**Author(s):** Ekman, G; Forman, A; Ulmsten, U; Wingerup, L

**Source:** Zentralblatt fur Gynakologie; 1980; vol. 102 (no. 4); p. 219-222

**Publication Date:** 1980

**Publication Type(s):** Journal Article

**PubMedID:** 7467962

**Abstract:**To terminate pregnancy 15 women with an established diagnosis of missed abortion or intrauterine dead fetuses were treated with 1.0 mg Prostaglandin E 2 in viscous gel applied as a single intracervical dose. -- Abortion was induced after a mean of 7.0 hours in 8 patients with a mean gestational age of 15.0 weeks, and a subsequent evacuation of the uterine cavity was easily performed. -- Complete abortion/delivery was obtained in 7 patients with a gestational age of 33 weeks. The over-all mean induction/delivery time was 7.5 hours. -- Apart from pain related to uterine contractions no side effects were observed and no complications occurred. It is concluded that the present technique represents a promising alternative in the treatment of patients with missed abortion or intrauterine dead fetuses.

**Database:** Medline

**46. Intravenous prostaglandin E2 and 16-phenoxy prostaglandin E2 methyl sulfonylamide for induction of fetal death in utero**

**Author(s):** Gruber W.S.; Baumgarten K.

**Source:** American Journal of Obstetrics and Gynecology; 1980; vol. 137 (no. 1); p. 8-14

**Publication Date:** 1980

**PubMedID:** 7369292

**Abstract:**The efficacy of intravenously administered prostaglandin E2 (PGE2) compared to that of intravenously administered 16-phenoxy-17,18,19,20 tetranor prostaglandin E2 methyl sulfonylamide (SHB 286) for termination of fetal death in utero was evaluated in 20 pregnant women from 14 to 38 weeks' gestation. Ten subjects received 0.25 mug of SHB 286 per minute. This rate of infusion was doubled at hourly intervals up to 2 mug per minutes. It appears that the dosage schedules of PGE2 and SHB 286 were equally effective in inducing labor. Cumulative expulsion rates and mean induction times were similar in both groups. Rates of emesis were low in both groups. Either fever



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greater than 38.0degreeC, or shivering, or phlebitis at the site of infusion was observed in three patients treated with PGE2 but in no patient receiving SHB 286.

**Database:** EMBASE

**47. The use of sulprostone, a prostaglandin E2 derivative, in intrauterine fetal death and therapeutic abortion.**

**Author(s):** Lippert, T H; Briel, R C

**Source:** Prostaglandins and medicine; Oct 1980; vol. 5 (no. 4); p. 259-265

**Publication Date:** Oct 1980

**Publication Type(s):** Comparative Study Journal Article

**PubMedID:** 7443872

**Abstract:**The prostaglandin E2 derivative Sulprostone was used in the management of intrauterine fetal death and in therapeutic abortion in advanced pregnancy. While with extraamniotic administration there was a success rate of 50% after 24 hours, the rate of success was 86% after intramuscular administration. A cervix-ripening effect was not always observed by means of intracervical injection of Sulprostone. Such pre-treatment of the cervix did not improve the induction-abortion time after intramuscular administration of Sulprostone. Side effects were only slight following Sulprostone.

**Database:** Medline

**48. Induction of labour with sulprostone after foetal death and in hydatidiform mole.**

**Author(s):** Saarikoski, S; Selander, K; Pystynen, P

**Source:** Prostaglandins; Sep 1980; vol. 20 (no. 3); p. 481-485

**Publication Date:** Sep 1980

**Publication Type(s):** Journal Article

**PubMedID:** 7422894

**Abstract:**Induction of uterine contractions was carried out with an intravenous infusion of sulprostone, a 16-phenoxy derivate of methylsulphonylamid prostaglandin E2 in 21 patients after intrauterine foetal death and in seven patients having hydatidiform mole. The mean total dose of sulprostone was estimated as 1100-1300 microgram in different groups. The mean induction-delivery time was 7-13 hours. Expulsion of the foetus occurred in 20 out of 21 cases during 24 hours after commencement of sulprostone infusion. In all patients having molar pregnancy uterine contractions induced with sulprostone opened the uterine cervix for evacuation. The drug was clinically well tolerated without any serious side-effects.

**Database:** Medline



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**49. A comparison between vaginal prostaglandin E2 suppositories and intrauterine extra-amniotic prostaglandins in the management of fetal death in utero.**

**Author(s):** Scher, J; Jeng, D Y; Moshirpur, J; Kerenyi, T D

**Source:** American journal of obstetrics and gynecology; Aug 1980; vol. 137 (no. 7); p. 769-772

**Publication Date:** Aug 1980

**Publication Type(s):** Comparative Study Journal Article

**PubMedID:** 7405968

**Abstract:** This retrospective study was undertaken to compare the efficacy, side effects, and complications of prostaglandin E2 (PGE2) given as a vaginal suppository with those of PGE2 administered via the intrauterine extra-amniotic route to induce labor after fetal death. The induction-to-delivery intervals were comparable, with 9.2 +/- 3.94 hours and 8.6 +/- 4.49 hours, respectively. However, the mean total amount of PGE2 administered was much less via the intrauterine extra-amniotic route (1.8 milligrams) than by the vaginal suppository (45.2 mg). There was a 100% success rate in the patients treated by the intrauterine extra-amniotic route, but only a 91.3% success rate in those patients treated via the vaginal route. The side effects (vomiting, diarrhea, fever) and the complications (incomplete abortion, uterine rupture, oxytocin augmentation) occurred more frequently with the use of PGE2 as a vaginal suppository. The vaginal route of administration of PGE2 is somewhat more convenient, but the intrauterine extra-amniotic route may offer a higher degree of efficacy and safety with fewer side effects in the management of fetal death in utero.

**Database:** Medline

**50. Management of intrauterine fetal death with prostaglandin E2 vaginal suppositories.**

**Author(s):** Lauersen, N H; Cederqvist, L L; Wilson, K H

**Source:** American journal of obstetrics and gynecology; Aug 1980; vol. 137 (no. 7); p. 753-757

**Publication Date:** Aug 1980

**Publication Type(s):** Journal Article

**PubMedID:** 7405965

**Abstract:** The recent Food and Drug Administration's approval of prostaglandin E2 (PGE2) vaginal suppositories provides the clinician with a technique for the immediate management of missed abortion and intrauterine fetal death (IUFD). During a 4-year period at our institution, 78 of 80 patients with gestations ranging from 13 to 42 weeks had pregnancy successfully terminated with PGE2 suppositories with a dose schedule of 20 mg every 2 hours. The mean interval from induction to delivery of the fetus was 8.9 hours. Fifty percent of the patients spontaneously expelled the placenta; active intervention to remove the placenta within 2 hours of delivery of the fetus is recommended to avoid excessive vaginal bleeding. The most frequently encountered side effect was a temperature elevation, which was managed by less frequent administration of the prostaglandin. Gastrointestinal side effects were minimized by premedication with antidiarrheal and antiemetic agents, which also were administered during the induction period when indicated by the patient's symptoms. A concomitant oxytocin infusion was utilized in 38 patients. In gestations of less than 24 weeks the oxytocin was administered via intravenous drip at a rate of 10 U/hour. In the case of a patient with IUFD and a gestation of 24 weeks or more, oxytocin should be administered only with a constant-rate infusion pump starting at a dose schedule of 1 mU/minute with careful titration of the



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dose against the monitored uterine activity. The availability of the vaginal PGE2 suppositories for missed abortion and IUFD makes it important for the clinician to fully acquaint himself with the drug, its administration, effects, and side effects.

**Database:** Medline

### **51. Fetal death in utero managed with vaginal prostaglandin E2 gel**

**Author(s):** MacKenzie I.Z.; Davies A.J.; Embrey M.P.

**Source:** British Medical Journal; 1979; vol. 1 (no. 6180); p. 1764-1765

**Publication Date:** 1979

**Publication Type(s):** Article

**PubMedID:** 466214

Available at [British Medical Journal](#) - from ProQuest (Health Research Premium) - NHS Version

Available at [British Medical Journal](#) - from PubMed Central

**Abstract:** The results with vaginal PGE2 gel were comparable with those obtained in this unit with extra-amniotic administration, 31 patients (62%) having aborted or delivered without further uterine stimulation; in the remainder the oxytocin infusion generally rendered expulsion of the conceptus inevitable within a few hours. The vaginal route, however, is simpler than the intrauterine and avoids the risk of sepsis without reducing therapeutic efficacy. Physical and emotional distress were minimal, 11 patients not requiring analgesia and only four suffering any gastrointestinal side effects. Abortion and delivery times compared favourably with those of Southern et al, who used repeated administration of 20 mg PGE2 vaginal pessaries, which provoked diarrhoea in 42.7% and vomiting in 56.4%. The 15 mg dose of PGE2 used for a uterine size below 29 weeks seems appropriate; a larger dose, although possibly reducing the need for oxytocin, would probably provoke more side effects. Success was reduced when uterine size was 11-13 weeks; however, suction evacuation was then easily performed and seems reasonable treatment when the uterus is this small and the cervix already softened and dilated. In more advanced pregnancies the larger dose to reduce the need for oxytocin might be inappropriate. Violent labour in the presence of a dead fetus incurs the risk of amniotic fluid embolism, and any great increase in dosage might therefore be imprudent.

**Database:** EMBASE



## **52. Mechanism of failed labor are fetal death and its treatment with prostaglandin E2**

**Author(s):** Schulman H.; Saldana L.; Lin C.C.; Randolph G.

**Source:** American Journal of Obstetrics and Gynecology; 1979; vol. 133 (no. 7); p. 742-752

**Publication Date:** 1979

**Publication Type(s):** Article

**PubMedID:** 434019

**Abstract:** Pregnancy was terminated with prostaglandin E2 in 65 women harboring a dead fetus for 3 days to 8 weeks. The study was designed to: (1) elucidate the mechanism of failed onset of labor in the presence of fetal death, (2) determine appropriate dose response relationships, and (3) evaluate safety and efficacy of this new method of intervention. Results indicate that plasma progesterone levels from 12 to 40 weeks' gestation are in the lower normal statistical range as compared to those seen in pregnancy with a living fetus. Uterine size as estimated from fetal birth weight is also in the low normal range compared to that seen in a viable pregnancy. Hence the uterine volume progesterone ratio is equal to or greater than that in normal pregnancy and thereby partially explanatory for the failed initiation of labor. The dosage required to produce delivery declined in each month's grouping from a mean of 56 +/- 26 (SD) mg at 12 to 15 weeks to 22 +/- 8.4 mg at 38 to 40 weeks. Dose delivery response did not correlate with age, parity, or progesterone levels but did correlate with oxytocin response. Three unusual and serious complications occurred.

**Database:** EMBASE

## **53. Association of extrauterine fetal death with failure of prostaglandin E2 suppositories**

**Author(s):** Orr Jr. J.W.; Huddleston J.F.; Goldenberg R.L.; Knox G.E.; Davis R.O.

**Source:** Obstetrics and Gynecology; 1979; vol. 53 (no. 3)

**Publication Date:** 1979

**Publication Type(s):** Article

**PubMedID:** 424129

**Abstract:** The use of prostaglandin E2 vaginal suppositories is an effective method of uterine evacuation for patients with intrauterine fetal demise. Advanced extrauterine gestation, because of its rarity, is usually not a primary consideration for patients presenting with fetal death. This report presents 4 such cases and strongly suggests that, when this drug is used for the treatment of fetal death, failure to induce contractions and to effect uterine evacuation within a reasonable time should prompt the consideration of extrauterine pregnancy.

**Database:** EMBASE





**54. The use of oral prostaglandin E2 in the management of intrauterine fetal death.**

**Author(s):** Kho, F H; de Bruin, A J

**Source:** Prostaglandins; Oct 1979; vol. 18 (no. 4); p. 663-672

**Publication Date:** Oct 1979

**Publication Type(s):** Journal Article

**PubMedID:** 531233

**Abstract:** 12 otherwise healthy patients with intrauterine fetal death 1 to 6 weeks earlier were treated with oral prostaglandin E2. 9 of the 12 patients delivered within 48 hours after treatment began. 2 others delivered with 48 hours after unsuccessful treatment ceased. In a third patient the cervix relaxed after treatment, and the uterine contents were removed by curettage. No serious complications, such as hemorrhage occurred. The uterus seemed surprisingly responsive to oral prostaglandin E2 in cases of intrauterine fetal death.

**Database:** Medline

**55. Fetal death in utero managed with vaginal prostaglandin E2 gel.**

**Author(s):** MacKenzie, I Z; Davies, A J; Embrey, M P

**Source:** British medical journal; Jun 1979; vol. 1 (no. 6180); p. 1764-1765

**Publication Date:** Jun 1979

**Publication Type(s):** Comparative Study Journal Article

**PubMedID:** 466214

Available at [British medical journal](#) - from ProQuest (Health Research Premium) - NHS Version

Available at [British medical journal](#) - from PubMed Central

**Database:** Medline

**56. Vaginal prostaglandin E2 for interruption of pregnancy and management of intrauterine death.**

**Author(s):** Thiery, M; Amy, J J; Decoster, J M

**Source:** Zeitschrift fur Geburtshilfe und Perinatologie; Jun 1979; vol. 183 (no. 3); p. 218-222

**Publication Date:** Jun 1979

**Publication Type(s):** Case Reports Journal Article

**PubMedID:** 483950

**Abstract:** Vaginal suppositories containing 20 mg prostaglandin E2, administered at 2-5h intervals, are very effective in interrupting second-trimester pregnancy and in inducing labor in case of death in utero. However, side effects are common and make the treatment unpleasant to most patients. Premedication with a maintenance of a potent anti-emetic (e.g. haloperidol) and an anti-diarrheic (e.g. loperamide) considerably reduce the frequency and severity of these side effects.

**Database:** Medline



**57. Mechanism of failed labor after fetal death and its treatment with prostaglandin E2.**

**Author(s):** Schulman, H; Saldana, L; Lin, C C; Randolph, G

**Source:** American journal of obstetrics and gynecology; Apr 1979; vol. 133 (no. 7); p. 742-752

**Publication Date:** Apr 1979

**Publication Type(s):** Case Reports Journal Article

**PubMedID:** 434019

**Abstract:** Pregnancy was terminated with prostaglandin E2 in 65 women harboring a dead fetus for 3 days to 8 weeks. The study was designed to: (1) elucidate the mechanism of failed onset of labor in the presence of fetal death, (2) determine appropriate dose-response relationships, and (3) evaluate safety and efficacy of this new method of intervention. Results indicate that plasma progesterone levels from 12 to 40 weeks' gestation are in the lower normal statistical range as compared to those seen in pregnancy with a living fetus. Uterine size as estimated from fetal birth weight is also in the low normal range compared to that seen in a viable pregnancy. Hence the uterine volume-progesterone ratio is equal to or greater than that in normal pregnancy and thereby partially explanatory for the failed initiation of labor. The dosage required to produce delivery declined in each month's grouping from a mean of 56 +/- 26 (SD) mg at 12 to 15 weeks to 22 +/- 8.4 mg at 38 to 40 weeks. Dose-delivery response did not correlate with age, parity, or progesterone levels but did correlate with oxytocin response. Three unusual and serious complications occurred.

**Database:** Medline

**58. Evacuation of the uterus by intravaginal PGE2 suppositories: a comparison of clinical effectiveness.**

**Author(s):** Dillon, W P; Chaudhuri, G; Hurd, M; Lippes, J

**Source:** Advances in planned parenthood; 1978; vol. 13 (no. 3-4); p. 30-34

**Publication Date:** 1978

**Publication Type(s):** Comparative Study Clinical Trial Journal Article

**PubMedID:** 367846

**Database:** Medline

**59. The use of prostaglandin E2 vaginal suppository in missed abortion, intrauterine death and hydatidiform mole.**

**Author(s):** Takagi, L R; Gulling, E A; O'Leary, J A

**Source:** Journal of the Medical Association of Georgia; Aug 1978; vol. 67 (no. 8); p. 644-645

**Publication Date:** Aug 1978

**Publication Type(s):** Journal Article

**PubMedID:** 574529

**Database:** Medline



**60. Vaginal prostaglandin E2 in the management of fetal intrauterine death.**

**Author(s):** Southern, E M; Gutknecht, G D; Mohberg, N R; Edelman, D A

**Source:** British journal of obstetrics and gynaecology; Jun 1978; vol. 85 (no. 6); p. 437-441

**Publication Date:** Jun 1978

**Publication Type(s):** Clinical Trial Journal Article

**PubMedID:** 350261

**Abstract:** The results of a multicentre clinical trial of prostaglandin E2 (PGE2) administered by the vaginal route in the management of intrauterine fetal death and missed abortion showed an overall efficacy of 97 per cent. The mean induction-abortion interval was 10.7 hours with a mean total dose of 60.4 mg of PGE2. Side effects were tolerated well and there was no evidence of significant alterations in hepatic or renal function.

**Database:** Medline

**61. Induction of labour with prostaglandin E2 gel in cases of intrauterine fetal death.**

**Author(s):** Lippert, T H; Lüthi, A

**Source:** Prostaglandins; Mar 1978; vol. 15 (no. 3); p. 533-542

**Publication Date:** Mar 1978

**Publication Type(s):** Comparative Study Controlled Clinical Trial Clinical Trial Journal Article

**PubMedID:** 351716

**Abstract:** In established intrauterine fetal death, 20 patients were treated with prostaglandin E2 gel administered extraamniotically. The results were compared with those of another group of 20 patients who had received combined treatment. In this group, one or more of the following agents had been administered :- i.v. oxytocin, 20% NaCl solution or Premarin instilled intraamniotically, introduction of a balloon catheter or Rivanol administered extraamniotically. Average induction-abortion interval for the PG group was about 12 hours while for the second group it was about 30 hours. The side effects observed were slight in both groups. The results show that administration of PG-gel can be used with advantage in fetal demise because of the relatively short induction-abortion intervals obtained, the insignificant side effects and the low dose of PG required.

**Database:** Medline



## **62. Management of missed abortion and fetal death in utero**

**Author(s):** El Demarawy H.; El Sahwi S.; Toppozada M.

**Source:** Prostaglandins; 1977; vol. 14 (no. 3); p. 583-590

**Publication Date:** 1977

**Publication Type(s):** Article

**PubMedID:** 905580

**Abstract:**Termination of pregnancy in missed abortion and intra-uterine fetal death was accomplished using vaginal suppositories of 20 mg PGE<sub>2</sub> in 31 cases and the results were compared with oxytocin induction (with or without estrogen pre-treatment) in 17 cases at the doses routinely used in our hospital. The PG suppositories proved much more superior (96.7%) than oxytocin (47.7%), but induced a higher rate of side effects. The latter were not serious and were generally tolerated by the patients. There was a positive correlation between duration of fetal retention in utero and the induction expulsion time. The over all patient acceptance of the method was quite favourable and the approach appears to be a definite advance towards management of these cases.

**Database:** EMBASE

## **63. Vaginal prostaglandin E<sub>2</sub> for missed abortion and intrauterine fetal death.**

**Author(s):** Rutland, A; Ballard, C

**Source:** American journal of obstetrics and gynecology; Jul 1977; vol. 128 (no. 5); p. 503-506

**Publication Date:** Jul 1977

**Publication Type(s):** Journal Article

**PubMedID:** 879208

**Abstract:**Vaginal suppositories containing 20 mg. of prostaglandin E<sub>2</sub> (PGE<sub>2</sub>) were given to 50 patients with a diagnosis of either missed abortion or fetal death. A total of 94 percent of the patients (47/50) expelled products of conception, and 84 percent of these expulsions (42/50) were complete. The mean time to expulsion of the fetus was 11.3 hours with a mean dose of 3.6 suppositiries. A total 60 per cent of the patients experienced vomiting, diarrhea, and pyrexia. Four patients had a blood loss in excess of 500 ml., and two of these patients required blood transfusion. Vaginal administration of PGE<sub>2</sub> suppositories appeared to be a rapid, safe, and reliable means of managing missed abortion and intrauterine fetal death.

**Database:** Medline



**64. Induction of labor in patients with missed abortion and fetal death in utero with prostaglandin E2 suppositories.**

**Author(s):** Lauersen, N H; Wilson, K H

**Source:** American journal of obstetrics and gynecology; Mar 1977; vol. 127 (no. 6); p. 609-611

**Publication Date:** Mar 1977

**Publication Type(s):** Journal Article

**PubMedID:** 557289

**Abstract:** Labor was successfully induced in 20 patients with a diagnosis of missed abortion or intrauterine fetal death (IUFD) by intravaginal administration of prostaglandin E2 suppositories. Fifteen patients delivered with the prostaglandin alone while a concomitant oxytocin infusion was employed to augment contractions in the other five patients. The mean induction-delivery time was 9.80 hours; nulliparous patients delivered in a mean time of 7.78 hours, parous patients in a mean time of 12.29 hours. The uterus appeared to be sensitive to the PGE2 stimulation in all patients and all were delivered completely without the need for surgical intervention. Fifty per cent of patients were delivered within 8 hours and 80 per cent by 12 hours. The side effects associated with prostaglandin administration--vomiting, diarrhea, and temperature elevation--were well tolerated and therapy did not have to be terminated in any patient. The administration of PGE2 vaginal suppositories offers an effective and safe technique for the induction of labor in patients with IUFD. Labor can be induced with PGE2 suppositories as soon as the diagnosis of IUFD is confirmed, which eliminates the need for waiting until spontaneous labor occurs.

**Database:** Medline

**65. Prostaglandin E2 of labor for fetal demise**

**Author(s):** Kent D.R.; Goldstein A.I.

**Source:** Obstetrics and Gynecology; 1976; vol. 48 (no. 4); p. 475-478

**Publication Date:** 1976

**PubMedID:** 967387

**Abstract:** Intrauterine fetal demise is a source of anxiety to both patient and physician. Heretofore, the standard treatment was either careful observation until the patient went into labor or attempt at induction of labor with oxytocin. Unfortunately, oxytocin stimulation has not proven to be uniformly successful for this problem. Prostaglandin E2 suppositories have been shown to be effective in inducing uterine evacuation after intrauterine fetal demise. In the opinion of the authors, this approach will in the future replace the sometimes dangerous and emotionally laden convention of watchful delayed therapy.

**Database:** EMBASE



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**66. Prostaglandin E2 induction of labor for fetal demise.**

**Author(s):** Kent, D R; Goldstein, A I

**Source:** Obstetrics and gynecology; Oct 1976; vol. 48 (no. 4); p. 475-478

**Publication Date:** Oct 1976

**Publication Type(s):** Journal Article

**PubMedID:** 967387

**Abstract:** Intrauterine fetal demise is a source of anxiety to both patient and physician. Heretofore, the standard treatment was either careful observation until the patient went into labor or attempt at induction of labor with oxytocin. Unfortunately, oxytocin stimulation has not proven to be uniformly successful for this problem. Prostaglandin E2 suppositories have been shown to be effective in inducing uterine evacuation after intrauterine fetal demise. In the opinion of the authors, this approach will in the future replace the sometimes dangerous and emotionally laden convention of watchful delayed therapy.

**Database:** Medline

**67. Intrauterine (extraamniotic) prostaglandins in the management of unsuccessful pregnancy.**

**Author(s):** Calder, A A; Mackenzie, I Z; Embrey, M P

**Source:** The Journal of reproductive medicine; May 1976; vol. 16 (no. 5); p. 271-275

**Publication Date:** May 1976

**Publication Type(s):** Research Support, U.s. Gov't, Non-p.h.s. Journal Article

**PubMedID:** 933106

**Abstract:** Extraamniotic administration of prostaglandin E2 or prostaglandin F2alpha has been used in the treatment of 72 cases of unsuccessful pregnancy which included 50 of fetal death in utero, 13 of anencephaly and nine of hydatidiform mole. This management is highly effective in achieving abortion or delivery within 24 hours in almost all cases and results in few side effects. Pyrexia occurred during treatment in three patients, but in none was intrauterine infection observed. Blood loss greater than 250 ml occurred in only two patients, and none required transfusion. We advocate the use of extraamniotic prostaglandins as an active approach to the problem of unsuccessful pregnancy to relieve the patient of emotional distress and avoid the hazards of blood coagulopathy and intrauterine infection, both of which increase the longer a dead fetus is retained in utero.

**Database:** Medline



**68. Management of intrauterine fetal demise and missed abortion using prostaglandin E2 vaginal suppositories.**

**Author(s):** Southern, E M; Gutknecht, G D

**Source:** Obstetrics and gynecology; May 1976; vol. 47 (no. 5); p. 602-606

**Publication Date:** May 1976

**Publication Type(s):** Journal Article

**PubMedID:** 1264407

**Abstract:**Two hundred and twelve patients diagnosed as having a missed abortion or intrauterine fetal death were managed by the use of prostaglandin E2 vaginal suppositories. The method had a high efficacy rate with 98% of the patients experiencing successful evacuation of the uterine contents. The mean time to abortion was 10.9 hours with a mean dose of 60 mg (3 suppositories). Side effects were well tolerated. Transient pyrexia was present in 36% of the patients during therapy, but returned to pretreatment levels after abortion. No intrauterine infection was observed. The risks associated with active treatment can be avoided. The ease of administration permits initiation of therapy as soon as the diagnosis is confirmed.

**Database:** Medline

**69. Management of missed abortion, intrauterine death and hydatidiform mole using prostaglandin E2**

**Author(s):** Murray C.P.; Clinch J.

**Source:** Irish Medical Journal; 1975; vol. 68 (no. 6); p. 133-135

**Publication Date:** 1975

**Publication Type(s):** Article

**PubMedID:** 1120656

**Abstract:**Thirty six patients with missed abortion, four with a hydatidiform mole and 25 with fetal death in utero had abortion or labor successfully induced with the intravenous infusion of prostaglandin E2. The method appears to be reliable and safe and does not require the high concentrations recommended by previous authors.

**Database:** EMBASE

**70. Induction of labor after intrauterine fetal death. A comparison between prostaglandin E2 and oxytocin**

**Author(s):** Gordon H.; Pipe N.G.J.

**Source:** Obstetrics and Gynecology; 1975; vol. 45 (no. 1); p. 44-46

**Publication Date:** 1975

**Abstract:**Medical induction of labor was attempted in 30 women after intrauterine death of the fetus. Labor was induced in 15 patients with oxytocin and in an additional 15 patients with prostaglandin E2. The results suggest that prostaglandin has some advantage over oxytocin in these circumstances, and that prostaglandins may be especially useful in this difficult clinical situation.



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**Database:** EMBASE

**71. Use of prostaglandin E2 vaginal suppositories in intrauterine fetal death and missed abortion.**

**Author(s):** Bailey, C D; Newman, C; Ellinas, S P; Anderson, G G

**Source:** Obstetrics and gynecology; Jan 1975; vol. 45 (no. 1); p. 110-113

**Publication Date:** Jan 1975

**Publication Type(s):** Journal Article

**PubMedID:** 1110809

**Abstract:** Twenty patients with either missed abortions or intrauterine fetal death were induced with prostaglandin (PGE<sub>2</sub>) vaginal suppositories. The uterus is surprisingly responsive to PGE<sub>2</sub> in cases of intrauterine death, yielding a short treatment-delivery interval. Blood coagulopathies which can develop after intrauterine death can be avoided through early diagnosis and treatment. Eighteen patients completely delivered and there were no serious complications. The remaining 2 patients required curettage. Side effects were mild in nature, consisting of occasional gastrointestinal symptoms. This method is now a standard procedure in cases of intrauterine fetal death and missed abortion at Yale-New Haven Medical Center.

**Database:** Medline

**72. Introduction of labor after intrauterine fetal death: A comparison between prostaglandin E2 and oxytocin.**

**Author(s):** Gordon, H; Pipe, N G

**Source:** Obstetrics and gynecology; Jan 1975; vol. 45 (no. 1); p. 44-46

**Publication Date:** Jan 1975

**Publication Type(s):** Comparative Study Journal Article

**PubMedID:** 1110817

**Abstract:** Medical induction of labor was attempted in 30 women after intrauterine death of the fetus. Labor was induced in 15 patients with oxytocin and in an additional 15 patients with prostaglandin E<sub>2</sub>. The results suggest that prostaglandin has some advantage over oxytocin in these circumstances, and that prostaglandins may be especially useful in this difficult clinical situation.

**Database:** Medline

**73. Use of prostaglandin E2 in the management of intra-uterine death.**

**Author(s):** Scher, J; Kiwi, R; Baillie, P

**Source:** South African medical journal = Suid-Afrikaanse tydskrif vir geneeskunde; Oct 1974; vol. 0 (no. 0); p. Suppl

**Publication Date:** Oct 1974

**Publication Type(s):** Journal Article

**PubMedID:** 4422764

**Database:** Medline



## Strategy 632613

#	Database	Search term	Results
1	Medline	(Dinoprostone).ti,ab	441
2	Medline	exp DINOPROSTONE/	27486
3	Medline	("Prostaglandin E2").ti,ab	22706
4	Medline	(PGE2).ti,ab	24343
5	Medline	(1 OR 2 OR 3 OR 4)	42978
6	Medline	("intrauterine fetal death").ti,ab	1389
7	Medline	("intrauterine foetal death").ti,ab	88
8	Medline	exp "FETAL DEATH"/	28568
9	Medline	("fetal death").ti,ab	5721
10	Medline	("foetal death").ti,ab	425
11	Medline	(stillborn OR "still born" OR stillbirth OR "still birth").ti,ab	10315
12	Medline	(death ADJ2 inutero).ti,ab	8
13	Medline	(death ADJ2 "in utero").ti,ab	568
14	Medline	(death ADJ2 intrauterine).ti,ab	3028
15	Medline	(death ADJ2 "intra uterine").ti,ab	317




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16	Medline	(6 OR 7 OR 8 OR 9 OR 10 OR 11 OR 12 OR 13 OR 14 OR 15)	37963
17	Medline	(5 AND 16)	161
18	EMBASE	(Dinoprostone).ti,ab	734
19	EMBASE	exp "PROSTAGLANDIN E2"/	53366
20	EMBASE	("Prostaglandin E2").ti,ab	30021
21	EMBASE	(PGE2).ti,ab	35074
22	EMBASE	(18 OR 19 OR 20 OR 21)	64691
23	EMBASE	("intrauterine fetal death").ti,ab	1918
24	EMBASE	("intrauterine foetal death").ti,ab	134
25	EMBASE	("fetal death").ti,ab	7677
26	EMBASE	("foetal death").ti,ab	545
27	EMBASE	(stillborn OR "still born" OR stillbirth OR "still birth").ti,ab	14278
28	EMBASE	(death ADJ2 inutero).ti,ab	1
29	EMBASE	(death ADJ2 "in utero").ti,ab	697
30	EMBASE	(death ADJ2 intrauterine).ti,ab	4019
31	EMBASE	(death ADJ2 "intra uterine").ti,ab	455
32	EMBASE	exp "FETUS DEATH"/	34711
33	EMBASE	(23 OR 24 OR 25 OR 26 OR 27 OR 28 OR 29 OR 30 OR 31 OR 32)	42481
34	EMBASE	(22 AND 33)	295




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35	EMBASE	(prostin).ti,ab	210
36	EMBASE	(33 AND 35)	9
37	Medline	(prostin).ti,ab	123
38	Medline	(16 AND 37)	3
39	Medline	exp "CERVICAL RIPENING"/	1035
40	Medline	(cervi* ADJ2 ripen*).ti,ab	1813
41	Medline	(39 OR 40)	2153
42	Medline	((second OR third) ADJ2 trimester*).ti,ab	27849
43	Medline	exp "PREGNANCY TRIMESTER, SECOND"/ OR exp "PREGNANCY TRIMESTER, THIRD"/	24907
44	Medline	(42 OR 43)	42889
45	Medline	(5 AND 41 AND 44)	75
46	EMBASE	exp "SECOND TRIMESTER PREGNANCY"/	21382
47	EMBASE	(22 AND 46)	188
48	Medline	exp "PREGNANCY TRIMESTER, SECOND"/	14437
49	Medline	(5 AND 48)	241
50	Medline	("fetal loss" OR "foetal loss").ti,ab	3618
51	Medline	(5 AND 50)	0
52	EMBASE	("fetal loss" OR "foetal loss").ti,ab	5008



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53 EMBASE

(22 AND 52)

4