Early Pregnancy Loss and Abortion: Patient-centered Counseling & Evidence-based Care

Jody Steinauer, MD, MAS
Dept. of Obstetrics, Gynecology & Reproductive Sciences
University of California, San Francisco

Disclosures

• I have no relevant financial disclosures.
• I will discuss off-label use of misoprostol.

Acknowledgements

• Robin Wallace & Carolyn Sufrin
Julie is a 23 year-old G1P0 at 6+5 by LMP with spotting x 1 day, no pain, β-HCG = 2672.

MSD = 25mm, no fetal pole

Objectives

1. Review early pregnancy loss
   - Review diagnostic features
   - Compare management options
     • Discuss role of patient preferences
     • Expectant, medical, aspiration (office vs. OR)

2. Review first-trimester abortion
   - Pregnancy options counseling
   - aspiration and medication techniques
**Early Pregnancy Loss (EPL)**

- 15-20% of clinically-recognized pregnancies
- 1 in 4 women experience EPL

### Clinical diagnosis:

- **Spontaneous abortion**
  - Vaginal bleeding + IUP, <20 wks
  - threatened, inevitable, incomplete, complete

### Ultrasound diagnosis:

- **Anembryonic gestation**
  - Trophoblast development without development of an embryo

- **Embryonic demise**
  - Embryo with no cardiac activity

### Stages of SAB:

**VB, + IUP, <20 wks**

<table>
<thead>
<tr>
<th>STAGE:</th>
<th>Os:</th>
<th>Tissue &amp; U/S:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Threatened</td>
<td>Closed</td>
<td>No tissue passed</td>
</tr>
<tr>
<td></td>
<td></td>
<td>IUP on U/S</td>
</tr>
<tr>
<td>Inevitable</td>
<td>Open</td>
<td>No tissue passed</td>
</tr>
<tr>
<td></td>
<td></td>
<td>IUP on U/S</td>
</tr>
<tr>
<td>Incomplete</td>
<td>Open</td>
<td>Tissue passed</td>
</tr>
<tr>
<td></td>
<td></td>
<td>+/- IUP on U/S</td>
</tr>
<tr>
<td>Complete</td>
<td>Closed</td>
<td>Tissue passed</td>
</tr>
<tr>
<td></td>
<td></td>
<td>No IUP on U/S</td>
</tr>
</tbody>
</table>
Normal Implantation

- Implantation:
  - 5-7 days after fertilization
  - Takes ~72 hours
  - Invasion of trophoblast into decidua → production of HCG

Embryonic disk: 1 wk after implantation

Diagnosis of EPL: β-HCG

- β-HCG detectable 6-12 days after ovulation
- Median serum concentration:
  - 4 weeks: 100 mIU/ml (5-450)
  - 10 weeks: 60,000 (5,000 – 150,000)
- Decline and plateau ~20,000
- No correlation b/t β-HCG and GA
Diagnosis of EPL

1. Clinical presentation
   - Bleeding, pain, LMP, examination

2. β-HCG
   - Isolated value, trend

3. Ultrasound
   - Sac, pole, pseudosac

Ultrasound & Early Pregnancy: Key Findings

- Gestational sac
  - Double decidual sign
  - Grows ~ 1mm/day

- Yolk Sac
  - Early circulatory system

- Embryonic Pole
  - Grows ~ 1mm/day

- Cardiac Activity
  - 100bpm → 140 bpm
What is the beta-hcg level above which you should see at least a gestational sac if a pregnancy is normal and can call it abnormal if you don’t see it?

a. 1500  
b. 2000  
c. 3000  
d. 4000

Beta Curves, Redefined

Letting go of the “double in 48 hours” rule

• Rate of increase depends on gestational age¹

• 49 normal intrauterine pregnancies
• Doubling time varies by gestational age
  <5 wks: 1.5 d
  5-6 wks: 2 d
  >7 wks: 3d

Beta Curves, Redefined

Letting go of the “double in 48 hours” rule

• Early studies used 85% CI as lower limit
  – Retrospective study of 20 women
  – Mean doubling time 2 days
  – 66% increase in 48 hrs
    • Poor sensitivity and specificity in cohort:
      – Of 12 ectopics – 17% normal rise
      – Of 16 normal pregnancies - 18% abnormal rise

• Newer data - different median and mean \(^2\)

2. Barnhart 2004 Obstet Gynecol

Beta Curves, Redefined

Letting go of the “double in 48 hours” rule

• 287 women with pain or bleeding and +UPT
  – No IUP on U/S but eventually had normal IUP
  – Initial β-HCG < 5000

• Ave GA by LMP = 38 days (range, 0-107)
• At least 2 β-HCG’s within 7 days

Barnhart 2004 Obstet Gynecol
**β HCG Trends in Normal IUP**

1. **99% of nl IUPs**
   - 1 day rise: ≥24%
   - 2 day rise: ≥53%
   - Median rise: 1 day = 50%, 2 day = 124%

2. Slowest expected increase for normal pregnancy = 53%

---

**Discriminatory & Threshold level**

- **Threshold** = lowest at which you can see
- **366 ♀ with VB/pain** $\rightarrow$ nl IUP

### 99% Predicted Probability of Detection

<table>
<thead>
<tr>
<th></th>
<th>Discriminatory</th>
<th>Threshold</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gestational sac</td>
<td>3510</td>
<td>2600</td>
</tr>
<tr>
<td>Yolk sac</td>
<td>17,716</td>
<td>1094</td>
</tr>
<tr>
<td>Fetal pole</td>
<td>47,685</td>
<td>1394</td>
</tr>
</tbody>
</table>

- **Old values:** 1500 = 80% & 2000 = 91% prob. of seeing GS in viable IUP.

Connolly 2013 Obstet Gynecol
Society of Radiologists in Ultrasound: No Gestational Sac

- HCG > 2000
  - Non-viable pregnancy
  - Ectopic is 19 x more likely than viable pregnancy
- HCG > 3000
  - Ectopic 70 x more likely than viable pregnancy
- HCG 2000 – 3000
  - Viable pregnancy: 2% chance
  - For each viable pregnancy:
    - 19 ectopics
    - 38 nonviable pregnancies

In women with desired pregnancy consider beta hcg cut-off of >= 3000.

Worry about ectopic.

What is the mean sac diameter at which you should see a fetal pole if a pregnancy is normal and can call it abnormal if you don’t see it?

a. 18 mm
b. 20 mm
c. 21 mm
d. 25 mm
Ultrasound Diagnosis of EPL: Anembryonic Gestation

Mean sac diameter >=21mm
(20 mm = 0.5% false positive)
AND no fetal pole

Abdallah et al 2011 (Aug) Ultrasound Obstet Gynecol

<table>
<thead>
<tr>
<th>MSD (mm)</th>
<th>Specificity</th>
<th>False +</th>
<th>Growth per day (wk)</th>
<th>Specificity</th>
<th>False +</th>
</tr>
</thead>
<tbody>
<tr>
<td>8mm</td>
<td>64%</td>
<td>36%</td>
<td>0.2mm (1.4mm)</td>
<td>99%</td>
<td>1%</td>
</tr>
<tr>
<td>16mm</td>
<td>95.6%</td>
<td>4.4%</td>
<td>0.6mm (4.2mm)</td>
<td>90%</td>
<td>10%</td>
</tr>
<tr>
<td>20mm</td>
<td>99.5%</td>
<td>0.5%</td>
<td>1.0mm (7mm)</td>
<td>45%</td>
<td>55%</td>
</tr>
<tr>
<td>21mm</td>
<td>100%</td>
<td>0</td>
<td>1.2mm (8.4mm)</td>
<td>24%</td>
<td>76%</td>
</tr>
</tbody>
</table>

MSD, no YS, no embryo

GROWTH:
0 mm/d = 0 False+

<table>
<thead>
<tr>
<th>MSD (mm)</th>
<th>Specificity</th>
<th>False +</th>
<th>Growth per day (wk)</th>
<th>Specificity</th>
<th>False +</th>
</tr>
</thead>
<tbody>
<tr>
<td>8mm</td>
<td>35.7%</td>
<td>64.3%</td>
<td>0.2mm (1.4mm)</td>
<td>98.6</td>
<td>1.4</td>
</tr>
<tr>
<td>16mm</td>
<td>97.4%</td>
<td>2.6%</td>
<td>0.6mm (4.2mm)</td>
<td>87.3</td>
<td>12.7</td>
</tr>
<tr>
<td>20mm</td>
<td>99.6%</td>
<td>0.4%</td>
<td>1.0mm (7mm)</td>
<td>43.7</td>
<td>56.3</td>
</tr>
<tr>
<td>21mm</td>
<td>100%</td>
<td>0</td>
<td>1.2mm (8.4mm)</td>
<td>25.2</td>
<td>74.8</td>
</tr>
</tbody>
</table>

Ultrasound Diagnosis of EPL: Embryonic Demise

Abdallah et al 2011 (Aug) Ultrasound Obstet Gynecol

- Fetal pole >= 5.3 mm AND no cardiac activity

<table>
<thead>
<tr>
<th>CRL (mm)</th>
<th>Specificity</th>
<th>False +</th>
<th>Growth per day (wk)</th>
<th>Specificity</th>
<th>False +</th>
</tr>
</thead>
<tbody>
<tr>
<td>3mm</td>
<td>75%</td>
<td>25%</td>
<td>0.2mm (1.4mm)</td>
<td>100%</td>
<td>0%</td>
</tr>
<tr>
<td>4mm</td>
<td>91.7%</td>
<td>8.3%</td>
<td>0.6mm (4.2mm)</td>
<td>56.3%</td>
<td>63.7%</td>
</tr>
<tr>
<td><strong>5mm</strong></td>
<td><strong>91.7%</strong></td>
<td><strong>8.3%</strong></td>
<td><strong>1.0mm (7mm)</strong></td>
<td><strong>0%</strong></td>
<td><strong>0%</strong></td>
</tr>
<tr>
<td>5.3mm</td>
<td>100%</td>
<td>0</td>
<td>1.2mm (8.4mm)</td>
<td>0%</td>
<td>0%</td>
</tr>
</tbody>
</table>

*16 FP, 0 TN. 37 TP, 1 TN

Ultrasound Milestones

<table>
<thead>
<tr>
<th>When should you see it?</th>
<th>Abnormality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gestational Sac</td>
<td>Discriminatory Level $\beta = 2000-3000+$</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Yolk sac</td>
<td>MSD&gt;13-16mm</td>
</tr>
<tr>
<td>Fetal pole</td>
<td>MSD $\geq 21$mm</td>
</tr>
<tr>
<td>Cardiac activity</td>
<td>Fetal pole $\geq 5.3$mm</td>
</tr>
</tbody>
</table>

Radiologists in Ultrasound: Account for Margin of Error

- MSD 24-25 mm
- Fetal pole 5.3-7 mm

Article problematic:
- Studies already account for error
- Recommend waiting 10-14 d
- Empty sac – risk of ectopic
Summary: Diagnosis of EPL

- Be cautious of only one point of information
- Determine whether pregnancy is desired
- Clinical history varies
- HCG rise in 48 hours: Minimum 53%
- Ultrasound:
  - No growth of small sac (IUP not confirmed)
  - No cardiac motion of pole $\geq 5.3$ (7) mm
  - Anembryonic sac $\geq 21$ (25) mm MSD

Remember ectopic pregnancy

Julie is a 23 year-old G1P0 at 6+5 by LMP with spotting x 1 day, no pain.
\[ \beta\text{-HCG} = 2672 \]

MSD = 25mm, no fetal pole

Anembryonic Gestation
**EPL Management**

**Expectant**  
**Medical**  
**aspiration**

**Depends on:**
1. Hemodynamic stability  
2. **Patient preference** and follow-up  
3. Stage in miscarriage process  
4. Local resources

**Women’s Preferences**

There is no “one best way.”

- Expectant management is preferred over aspiration by 70% of women.
- When uterine aspiration is indicated or preferred, the majority of women will choose an office-based procedure over one in the OR.

Smith 2006; Wieringa-de Waard 2002; Dalton 2006
Women’s Preferences

• **Surgery**
  – Quick resolution
  – Want and value support from hospital staff¹

• **Expectant**
  – Desire a natural solution¹
  – Fear of operation¹
  – More preferred with higher level information & support²
  – 71% with success would opt for same in future³

• **Misoprostol**
  – Faster resolution
  – More natural solution without surgery

---


---

Patient Priorities

Adapted from Wallace et al 2010 Patient Educ Couns
©Robin Wallace, 2011
Personal Priorities
- Treatment by your own provider
- Recommendation of treatment from friend or family member
- Provider recommendation of treatment
- Experience symptoms of bleeding and cramping in private
  - Family responsibilities/needs

Physical Priorities
- Least amount of pain possible
- Fewest days of bleeding after treatment
- Lowest risk of complications
- Lowest risk of need for other steps
- Avoid invasive procedure
- Avoid medications with side effects
- Avoid seeing blood
- Avoid going to sleep in case of a aspiration procedure
- Want to be asleep in case of a aspiration procedure

Emotional Priorities
- Most natural process
- Avoid seeing the pregnancy tissue

Previous Miscarriage or Abortion (if applicable)
- Different treatment from previous
- Similar treatment to previous

Time and Cost Priorities
- Shortest time before miscarriage is complete
- Shortest time in the clinic or hospital
- Fastest return to fertility or normalcy
- Fewest number of clinic visits
- Lowest cost of treatment to you

EPL Management Practices in the U.S.


Adapted from Dalton AJOG 2010

n=976 ob-gyn, family medicine, CNMs
Which management strategy for early pregnancy loss has the highest success at 1 week?

a. Expectant management
b. Medical management (misoprostol)
c. Uterine aspiration

<table>
<thead>
<tr>
<th>Management Strategy</th>
<th>Overall Success Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Expectant</strong></td>
<td>60%-70%</td>
</tr>
<tr>
<td>(14 days)</td>
<td></td>
</tr>
<tr>
<td>Anembryonic</td>
<td>50%</td>
</tr>
<tr>
<td>Embryonic Demise</td>
<td>35%-60%</td>
</tr>
<tr>
<td>Incomplete</td>
<td>75% - 85%</td>
</tr>
<tr>
<td><strong>Misoprostol</strong></td>
<td>70% - 96%</td>
</tr>
<tr>
<td>(7 days)</td>
<td></td>
</tr>
<tr>
<td>800 mcg PV</td>
<td></td>
</tr>
<tr>
<td>Anembryonic</td>
<td>81%</td>
</tr>
<tr>
<td>Embryonic Demise</td>
<td>88%</td>
</tr>
<tr>
<td>Incomplete</td>
<td>93%</td>
</tr>
<tr>
<td><strong>Aspiration</strong></td>
<td>97% - 100%</td>
</tr>
</tbody>
</table>
Expectant Management: Completion Rates

<table>
<thead>
<tr>
<th>Condition</th>
<th>Day 7 (%)</th>
<th>Day 14 (%)</th>
<th>Day 46 (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incomplete Ab (n=221)</td>
<td>53</td>
<td>71*-84</td>
<td>91</td>
</tr>
<tr>
<td>Anembryonic gestation (n=92)</td>
<td>25</td>
<td>53*52</td>
<td>66</td>
</tr>
<tr>
<td>Embryonic demise (n=138)</td>
<td>30</td>
<td>35*-59</td>
<td>76</td>
</tr>
<tr>
<td>Total (n=451)</td>
<td>40</td>
<td>61*-70</td>
<td>81</td>
</tr>
</tbody>
</table>

* n=203 - Casikar

Luise 2002 BMJ
*Casikar 2010 Ultrasound Obstet Gynecol

Expectant Management: Contraindications

- Uncertain diagnosis
- Severe hemorrhage or pain
- Infection
- Suspected gestational trophoplastic disease
- Indicated karyotyping

Same contraindications for medical management
Expectant Limitations

- **Size**: Studies generally include gestations up to 9 weeks
- **Time**: Safety established up to 6 weeks of observation
- **Maternal conditions**: inappropriate for bleeding at home
- **Social**: inability to obtain prompt emergency care, understand precautions

Misoprostol

- PGE1 analogue
- Tabs 100 mcg unscored, 200 mcg scored
- Inexpensive
- Rapidly absorbed PO, PV, PR, SL, buccal
- Common obstetrical uses: labor induction, medical abortion, PPH, cervical ripening
Misoprostol: Off-label Use

- FDA approved for prevention/tx of gastric ulcers
- Once licensed, FDA does not regulate how used
- Commonly practiced, often standard of care
- Not experimental if based on sound scientific evidence

1. Friedman, FDA Deputy Commissioner speech to U.S. House of Representatives 1996
2. Rayburn, Obstet Gynecol 1993

Medical Management: Misoprostol for EPL

- Small studies with wide range of doses, follow-up and definition of success
  - 800 mcg vaginally, repeated in 24h PRN
  - ↑ Side effects with PO, buccal, SL
  - 400-600 mcg buccal or sublingual
- Success (avoid aspiration intervention) 70-96%
  - Incomplete: higher success
- More acceptable than aspiration
  - 90% would choose again

1. Zhang et al. NEJM, 2005
2. Weeks et al, Obstet Gynecol 2005
5. Wood et al, Ob Gyn 2002
Misoprostol vs. Aspiration: MEPF Study

• 652 ♀ w/ EPL or incomplete Ab → Miso or D&C
• D1: Miso 800 mcg PV
  – D15: follow-up (all)
• Success (no need for additional D&C) by D 8
  – Miso: 84% (CI, 81-87) vs. D&C: 97% (CI, 94-100)
  – Lowest for anembryonic demise (81%)
  – 70% success after 1 dose; 60% after 2nd dose
• Complications: No difference
• Satisfaction: No difference (78% vs. 83%)

Example of Misoprostol Algorithm

Adapted from Goliberg 2009 in Mgmt of unintended & abnl pregnancy
Aspiration Management
Suction Curettage

- Safe, high efficacy (>95%)
- No need to do in Operating Room
  - Outpatient or ED setting – cost-effective
  - Manual Uterine Aspiration / Manual Vacuum Aspiration

- Used with 5-12 mm cannulae
  Capacity 60 cc

Aspiration Management
MUA/MVA

- Manual v. electric: no difference - complication (2.5% vs. 2.1%)\(^1\), pain, provider or pt. satisfaction\(^2,3\)
- MUA in ER compared to EVA in OR:\(^4\)

<table>
<thead>
<tr>
<th></th>
<th>EVA in OR</th>
<th>MUA in ER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wait time (↓ 52%)</td>
<td>7.14 hrs</td>
<td>3.45 hrs</td>
</tr>
<tr>
<td>Procedure time</td>
<td>33 min</td>
<td>19 min</td>
</tr>
<tr>
<td>Total cost (↓ 41%)</td>
<td>$1404</td>
<td>$827</td>
</tr>
</tbody>
</table>

2012 study supports cost-effectiveness of outpatient MUA to OR-based UA\(^5\)

---

\(^1\) Goldberg 2004 Ob Gyn; \(^2\) Dean, Contraception 2003; \(^3\) Edelman A, Ob Gyn 2001;184:1564; \(^4\) Blumenthal 1992 IJOG; \(^5\) Raush Fertil Steril 2012.
Moving MUA out of OR

- Process described by U Michigan
  - Medical evidence review
  - Review of hospital policy for office procedures
  - Trained physicians, nurses, and MAs
    - Hands-on workshops
  - Institution of privileging program
  - Review experience of patients
  - Review cost – gyn reimbursement same, lower institutional cost - $1965 v. $968

90% uterine aspirations are done in OR

Harris, AJOG, 2007.

Overall Success Rates

- Expectant up to 70-85% in 2 wks
- Misoprostol (800 mcg pv) up to 81-96% success in 1 week
- Uterine Aspiration: 97%-100%
The Patient – Provider Interaction

- Affects patient choice and satisfaction
- One half of women would change their decision based on our recommendation

Support women in identifying their values in and priorities for management.

Be prepared to offer all options, including misoprostol and office-based uterine aspiration.

The Patient – Provider Interaction

- Threatened Abortion
  - Keep the patient informed
    - Provide reassurance, but avoid guarantees that “everything will be all right”
    - Provide support through process

- What does the bleeding mean?
  - 50% ongoing pregnancy with closed os
  - 85% ongoing pregnancy with viable IUP on u/s
  - Up to 30% of normal pregnancies have VB
The Patient – Provider Interaction

- Remain silent after initial results or information
- Follow-up with open-ended questions & active listening
- Use neutral responses
- Determine how the woman feels about the pregnancy
- Normalize emotions
- Validate feelings rather than trying to change them
- Avoid opinions about what patient “should” do
- Encourage seeking emotional support from others
- Assure that you will be available to her through the process, and answer questions as they arise

Key Points: Management

- Offer all 3 management options if stable
  - Know success rates when counseling patients
  - Patient preference plays a major role
  - Minimal difference in risk
- Need for aspiration intervention should be based on clinical judgment
- Outpatient MUA is acceptable to women and cost-effective
Abortion

Case: Sara is a 24-year-old woman who had a baby 2 years ago who presents to you complaining of a missed period. Her pregnancy test is positive, and she is unsure about continuing the pregnancy.
Pregnancies in the United States (6.6 Million)

Outcomes of Unintended Pregnancies (3.4 Million)

Abortions | Births
---|---
40 | 60

1.1 million in 2011

Finer and Zolna, AJPH, 2014
What proportion of abortions done in the US is done in the first trimester (12 weeks or less?)

a. 60%

b. 70%

c. 80%

d. 90%

Abortions by Gestational Duration

<table>
<thead>
<tr>
<th>Weeks</th>
<th>% of abortions</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;9</td>
<td>63%</td>
</tr>
<tr>
<td>9–10</td>
<td>17%</td>
</tr>
<tr>
<td>11–12</td>
<td>9%</td>
</tr>
<tr>
<td>13–15</td>
<td>7%</td>
</tr>
<tr>
<td>16–20</td>
<td>3%</td>
</tr>
<tr>
<td>21+</td>
<td>1%</td>
</tr>
</tbody>
</table>

Source: Henshaw adjustments to Strauss et al., 2007 (2004 data)
Pregnancy Test +:
Counseling Points

• What do you think/hope the results will be?
• Validate and normalize
• Seek understanding
  – Can you say more about what you are feeling?
• Reframe
  – Use what you have learned from her
  – What I hear you saying is you are making this decision because you care about your children’s well-being
• If needed find someone to help
• www.faithaloud.org / www.yourbackline.org

Counseling Websites

www.faithaloud.org  www.yourbackline.org
Obligations to Patient

- Study of 1200 physicians: theoretical case
- Would it be ethical to describe why the physician objects to the requested procedure?
  - 63% yes
- Does the physician have obligation to present all options to patient, including information about the requested procedure?
  - 86% yes
- Does the physician have an obligation to refer?
  - 71% yes


Abortion Is Safe*

- Abortion is one of the safest procedures
- Successful in 98-100% cases
- Complications are rare (0.04% - 0.07%)
- Abortion is even safer if earlier in pregnancy
- Early abortion is very simple to perform

*When done by safe practitioner in safe conditions
Legal Status is Not Correlated with Incidence, only Safety

- The lowest abortion rates in the world - less than 10 - are in countries in Europe, where abortion is less restrictive.
- In Africa and Latin America - where abortion laws are most restrictive - the rates are 29 and 31.
1st Trimester Abortion

- Vacuum Aspiration Abortion
  - Manual or electric
  - Less than 14 weeks gestation
- Medical Abortion
  - Less than 9 weeks gestation

1st Trimester Aspiration Abortion

- Counseling
  - pregnancy options
  - procedural
  - contraception
- Preoperative Assessment
- Analgesia and Anesthesia
- Cervical Dilation
- Aspiration
- Recovery
Manual Vacuum Aspiration

- About 50% of U.S. abortion providers use MVAs\(^1\)
- Usually without sharp curettage
- Must empty syringe during procedure with gestation > 7 or 8 wks
- Women appreciate less noise\(^2,3,4\)


Medical/Medication Abortion
1st Trimester Medical Abortion

- Take mifepristone in office
- Go home with pain medications
- Six hours to three days later:
  - Place misoprostol pills in vagina
  - Over next 4 to 24 hours+ bleeding
- Return to clinic as early as 3 days later
  - Call earlier if unexpected symptoms

FDA-Approved vs. Evidenced-Based Regimens for Medical Abortion

FDA-Approved
- 600 mg Mifeprex PO given in the clinic
- Miso given orally
- 400 mcg misoprostol
- Miso 2 days later
- Miso given in the clinic
- Follow-up day 14
- Gestational limit 7 wks

Evidenced-Based
- 200 mg Mifeprex PO given in the clinic
- Miso vaginally/ buccally
- 800 mcg misoprostol
- Miso 6 hrs-3 days* later
- Pt takes at home
- Follow-up day 3 to 14
- Gestational limit 9 wks

*3 days studied to 8 wks gestation
Medical Abortion Efficacy

- FDA-approved regimen
  - 92-96% effective for gestation < 49 days
  - 50% complete abortion within 4 hours
- Alternative regimen:
  - 96-99% effective for gestation < 63 days
  - 93% complete in less than 4 hours

Evidence-based Regimen
Medical Abortion Side Effects

- SIDE EFFECT | % OF WOMEN
- Bleeding longer than 30 days | 9
- Bleeding before misoprostol (after mife) | 21 – 47
- Passage of pregnancy before misoprostol | 4
- Abdominal pain requiring narcotics | 29 – 73
- Nausea | 20 – 65
- Vomiting | 10 – 44
- Diarrhea | 3 – 29
- Chills or fever | 7 – 44
- Headache | 27 – 32
- Dizziness | 12 – 38

An Abortion Is Safer the Earlier in Pregnancy It Is Performed

Deaths per 100,000 abortions

Sources: All births and abortions: CDC.gov; Abortion by gestation: Bartlett et al., 2004 (1988–1997 data)
Abortion Complications

• First-trimester
  – Infection 0.1%
  – Hemorrhage
    • Medication abortion – up to 1%
    • Aspiration abortion – 0.1%
  – Re-aspiration
    • Medication abortion – up to 5%
    • Aspiration abortion – 1%

Hakim-Elahi, Obstet Gynecol, 1990

Aspiration Abortion: Antibiotic Prophylaxis

• Decreases post-aspiration infection
  – Recommend for all aspiration (EPF too)
  – Meta-analysis: RR 0.58
• My recommendations:
  – Doxy 100 mg po immediately before (or 400 mg night before) and 200 mg after
  – Azithro 1 gm before the procedure
  – Metronidazole 400mg before and 4 & 8 hrs after

Sawaya GF. Obstet Gynecol 1996
Cervical Block Decreases Pain

- 20 mL 1% buffered lidocaine
- Slow, deep injection at tenac + 4 sites
- Stratified by <8 weeks (early)/ 8-10 weeks (late)

<table>
<thead>
<tr>
<th>Pain /100</th>
<th>BLOCK</th>
<th>NO BLOCK</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>With block</td>
<td>49/58</td>
<td>24/35</td>
<td>.001</td>
</tr>
<tr>
<td>Dilation</td>
<td>34/51</td>
<td>75/83</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Aspiration</td>
<td>58/67</td>
<td>88/88</td>
<td>&lt;.001</td>
</tr>
</tbody>
</table>

Rennier, Ob Gyn May 2012

Cervical Injections

Paracervical vs. intracervical

Hybrid →

Superficial vs. deep injection

Ob/gyn shark
Cervical Block for Uterine Aspiration

1. Deep injections better than superficial (but hurt)
2. Larger volume of injection better (20ml vs. less)
3. Slow injection helps with block pain
4. Buffering lidocaine - less pain than not or bupiv
5. Routinely waiting more than a couple minutes after administering block unlikely to be helpful
6. Adding vasopressin decreases bleeding and possibly re-aspiration and increases amount of block that can be used

Aspiration Abortion:
Cervical Ripening to Decrease Risk of Cervical Laceration

- SFP 2007
  - Consider priming for all adolescents
  - All women over 12 to 14 weeks
- WHO 2003
  - Younger than 18 years old
  - Nulliparous over 9 weeks
  - All women over 12 weeks
- RCOG 2004
  - Younger than 18 years old
  - All women over 10 weeks
Conclusions

• Abortion is common and usually early
• Safe abortion decreases morbidity and mortality
  – Complications are rare
• It is important to refer as soon as possible

Sawaya GF. Obstet Gynecol 1996