Retrospective review of Medical Management of Ectopic Pregnancies with Methotrexate at a South African Tertiary Hospital

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Introduction

- Ectopic pregnancy: blastocyst implants outside of uterus
  98% in fallopian tube
  can cause distention and rupture

- Potential life threatening: emergency surgery

- Incidence increasing: 1-2% of all pregnancies

- Improvement in US and β-hCG measurement, assures early and accurate diagnosis
Medical Management

• Success rate up to 93% in carefully selected patients

• Methotrexate (MTX): folic acid analogue
inhibits di-hydrofolate reductase
prevents synthesis of DNA

• Good solution? Hospital with ever increasing demand
Long waiting list for surgery
Medical Management

• 3 treatment regimes:
  – One dose
  – Two dose regime
  – Fixed multi dose

• MTX used with protocols based on British and American guidelines.

• Objective outcome unknown in our institution
Primary Outcome

Determine success of single dose MTX at Tygerberg Hospital (TBH)

Success: patients not requiring surgical intervention

Objectives

Establish protocol for use of MTX for ectopic pregnancy at TBH
Secondary Outcomes

• How many patients required repeat doses?

• Time required for follow-up?

• Number needing hospital admission?

• Serious adverse outcomes?

• Compliance?
Methods

• 5-year retrospective audit (23/05/2008 to 23/05/2013)

• Ethical approval NR: S12/08/229

• List of all patients treated with MTX was obtained from pharmacy

• Traced to site

• All female patients treated with MTX for ectopic pregnancies were included
Data Summary

Total identified = 181

124 met criteria and were included.

57 excluded due to:
- 15 folders missing
- 42 MTX for other reasons

<table>
<thead>
<tr>
<th>Age</th>
<th>HIV</th>
<th>Gravidity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Range from 17 to 44</td>
<td>11 Positive (8.9%)</td>
<td>17 Primigravida (13.7%)</td>
</tr>
<tr>
<td>Mean = 29 years (SD = 5.5)</td>
<td>50 Negative (40.3%)</td>
<td>107 Multigravida (86.3%)</td>
</tr>
<tr>
<td></td>
<td>63 Unknown (50.8%)</td>
<td></td>
</tr>
</tbody>
</table>
# Risk Factors for Ectopic Pregnancies

<table>
<thead>
<tr>
<th>Risk Factor</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Previous Ectopic</td>
<td>18</td>
<td>14.6%</td>
</tr>
<tr>
<td>Sexually Transmitted Infections</td>
<td>20</td>
<td>16.1%</td>
</tr>
<tr>
<td>Smoking</td>
<td>59</td>
<td>47.6%</td>
</tr>
<tr>
<td>Fertility Problems</td>
<td>10</td>
<td>8.0%</td>
</tr>
<tr>
<td>Reversal of Tubal Ligation</td>
<td>2</td>
<td>1.6%</td>
</tr>
<tr>
<td>Intra Uterine Contraceptive Device</td>
<td>0</td>
<td>0.0%</td>
</tr>
</tbody>
</table>
Results

- No surgery and β-hCG < 15 IU/L: 55 (44%)
- Surgery: 18 (15%)
- Other: 51 (41%)
- Lost to Follow-Up: 37 (30%)
- β-hCG < 50 IU/L: 14 (11%)
## Treatment Regime

<table>
<thead>
<tr>
<th>Treatment Regime</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single Dose</td>
<td>107</td>
<td>86.3%</td>
</tr>
<tr>
<td>Repeated Dose</td>
<td>17</td>
<td>13.7%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Success</td>
<td>9</td>
<td>53.0%</td>
</tr>
<tr>
<td>Surgery</td>
<td>4*</td>
<td>23.5%</td>
</tr>
<tr>
<td>Lost to Follow-Up</td>
<td>4</td>
<td>23.5%</td>
</tr>
</tbody>
</table>

*1 Required 3rd dose, and eventually treated with a laparoscopic salpingostomy for an unruptured ectopic due to rising β-hCG level.
Baseline $\beta$–hCG levels of success and surgery groups
Baseline Ultrasound Mass Size of success and surgery groups
<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean = 5</th>
<th>Maximum = 13</th>
</tr>
</thead>
<tbody>
<tr>
<td>Follow-up Visits</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Required Admission</td>
<td>100</td>
<td>Mean time admitted = 2.5 days</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maximum = 10 days</td>
</tr>
<tr>
<td>Day 4 β-hCG Decline</td>
<td>42 out of 55 success</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 out of 18 surgery</td>
<td></td>
</tr>
<tr>
<td>Adverse Outcome</td>
<td>1</td>
<td>Presented in shock with a ruptured ectopic requiring surgery and blood transfusion.</td>
</tr>
<tr>
<td>Advice Documented</td>
<td>62.0%</td>
<td></td>
</tr>
<tr>
<td>Contraception on Discharge</td>
<td>35.6%</td>
<td></td>
</tr>
</tbody>
</table>
Conclusion

• MTX decreased number requiring surgery

• Only 1 major adverse outcome

• Concerns:
  – Poor follow-up
  – Lack of documentation
  – Lack of counselling with regards to warning signs
  – Lack of contraception advice

• Proper knowledge of a treatment protocol with correct patient selection is crucial.
Recommendations

• Patient factors:
  – Careful counselling and patient selection
  – Patient must be well informed, willing and able to comply to the follow-up regime

• Medical staff:
  – Staff training: sound knowledge of treatment protocol and follow-up regimen
  – Counselling of patients
  – Contraception counselling

• Administrative:
  – Better follow-up program implementation, tracing
  – Patient kept card containing follow up dates, clinical information and patient information
Recommendations

• Medical treatment is a safe option if correct advice is given, documentation is adequate and patients comply with follow up
Implications of the research

• Continue using MTX treatment
• Design a protocol for Tygerberg Hospital
• Develop better follow up procedure with patient tracing
• Design patient kept card
1. References

3. Kruger TF, Botha MH. Clinical Gynaecology 3rd ed. 2007 Cape Town; 177-180
5. Berek JS. Berek & Novak’s Gynecology 14th ed. 2007 Lippincott Williams & Wilkins; 621-623
1. References
Oxford; 106-122
3. Kruger TF, Botha MH. Clinical Gynaecology 3rd ed. 2007 Cape Town; 177-180
5. Berek JS. Berek & Novak's Gynecology 14th ed. 2007 Lippincott Williams & Wilkins; 621-623
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