Adherence with prescription drugs in pregnant and breastfeeding women consulting with the Israel Poison Information Center Teratology Service

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Introduction

• In the US, up to 70% of women use at least one prescription medicine any time during pregnancy
• We don’t have the data about the prevalence in Israel
• But women here and in the US share the same concern:
  • Do I harm my baby by taking the medication?
  • The physicians often hesitate to prescribe due to safety concerns
  • So they seek for reassurance…
Medication use during pregnancy and breastfeeding

• Inappropriate use of teratogenic medications can harm the fetus

• Exaggerated perception of teratogenic risk increases anxiety, may reduce adherence, and may even lead a pregnant woman to consider the unnecessary termination of pregnancy.

• In breastfeeding women, concerns about drug safety can lead to temporary or permanent cessation of breastfeeding, although this is rarely indicated.

• We do not have any data about the adherence of Israeli pregnant and breastfeeding women to prescription medications.
Adherence to prescription medications in pregnant and breastfeeding women

Objectives:

• To evaluate adherence to prescription drugs in pregnant and breastfeeding Israeli women;

• To evaluate what information they received by the prescriber regarding the safety of their prescription drugs during pregnancy or breastfeeding;

• To evaluate the women’s awareness and pattern of utilization of Teratogen Information Services in Israel.

The study included two parts
Part 1: Design and participants

Participants:

Pregnant or breastfeeding women who received a medication prescription and then contacted the teratology phone service of the Israeli Poison Information Center (IPIC).

• Exclusion criteria: Prescriptions for topical dermal and ear, nose, and throat preparations

Intervention:

At the end of the telephonic consultation, we asked eligible women to participate in the study, and scheduled a follow-up call if they gave oral consent.
Part 1: Design (contd.)

• Follow-up study call (± 2 weeks after the consultation call) to interview the women after they already started therapy and to minimize recall bias

• Adherence was defined as using the medication by the time of follow up interview

• We recorded the lag time between the prescription date and medication initiation and the lag time between prescription date and the original telephonic consultation

• Breastfeeding women: Was breastfeeding interrupted due to the drug therapy?
Part 1: Results - Telephone interview study

- We recruited 60 pregnant women who contacted the IPIC to consult about 63 prescriptions, and 75 breastfeeding women who were consulted about 80 prescriptions.

- The follow-up study call was performed after a median of 11 days (IQR, 5 to 21.5 days)
<table>
<thead>
<tr>
<th>Variable</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Age (years), Median (IQR)</td>
<td>32 (26.25-36)</td>
</tr>
<tr>
<td>Secondary education</td>
<td>32%</td>
</tr>
<tr>
<td>Tertiary education</td>
<td>68%</td>
</tr>
<tr>
<td>Religion</td>
<td>Jewish 98.3%, Muslim 1.7%, Christian 0%</td>
</tr>
<tr>
<td>Age of pregnancy (weeks), Median (IQR)</td>
<td>20 (14-30)</td>
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<tr>
<td>Trimester of pregnancy</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; 20%, 2&lt;sup&gt;nd&lt;/sup&gt; 50%, 3&lt;sup&gt;rd&lt;/sup&gt; 30%</td>
</tr>
<tr>
<td>Number of pregnancies (including current)</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>25%</td>
</tr>
<tr>
<td>2</td>
<td>20%</td>
</tr>
<tr>
<td>3</td>
<td>17%</td>
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<tr>
<td>4</td>
<td>22%</td>
</tr>
<tr>
<td>&gt;4</td>
<td>17%</td>
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<tr>
<td>Previous abortion</td>
<td>33.3%</td>
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</table>
Demographic and Breastfeeding data, breastfeeding women (n=75)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years), Median (IQR)</td>
<td>32 (28-35)</td>
</tr>
<tr>
<td>Secondary education</td>
<td>16%</td>
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<tr>
<td>Tertiary education</td>
<td>84%</td>
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<tr>
<td>Religion</td>
<td>Jewish 98.7%, Muslim 1.3%, Christian 0%</td>
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<tr>
<td>Age of the breastfed baby (months) Median (IQR)</td>
<td>3 (2-7)</td>
</tr>
<tr>
<td>Exclusive breastfeeding</td>
<td>49.3%</td>
</tr>
</tbody>
</table>
Distribution of medication classes

n=63 prescriptions to pregnant women

- Antimicrobials: 60%
- Antidepressants: 10%
- Asthma/allergy: 9.5%
- GI: 9.5%
- Others: 5%
- Systemic steroids: 4%
- Analgesics: 6%

n=80 prescriptions to breastfeeding women

- Antimicrobials: 54%
- Antidepressants: 10%
- Asthma/allergy: 15%
- GI: 8%
- Others: 4%
- Systemic steroids: 6%
- Analgesics: 4%
Adherence to prescription drug

87% of pregnant and 89% of breastfeeding women had initiated the medication by the time of the follow-up call.
Predictors of non-adherence

• No statistically significant differences in demographic or clinical parameters between adherent and non-adherent pregnant women

• Among breastfeeding women, prescriptions for antimicrobials and GI / anti-hemorrhoids agents were more common among adherent patients, and antidepressants/ anxiolytics were more common among non-adherents (p=0.036).
Time from prescription to IPIC consultation by pregnant (■) and breastfeeding women (■)

Most women (71% of pregnant and 69% of breastfeeding women) called the IPIC within 1 day after receiving the prescription.
Medication safety information provided by the prescribing physician

- Explicit and unequivocal advice: 49%
- Equivocal advice: 18%
- No safety information: 33%

Explicit and unequivocal advice: 45%
- Equivocal advice: 31%
- No safety information: 24%
Medication safety information provided by the prescribing physician

• Even when medication safety information was provided, it was not always competent.

• Among breastfeeding women, 7 (9.3%) were advised by the prescriber to stop breastfeeding:
  (Omeprazole, amoxicillin, clarithromycin, amoxicillin/clavulanic acid, azithromycin, levofloxacin, prednisone, furosemide)

• Most of these medication (with the possible exception of furosemide) are compatible with breastfeeding.
Part 2: Questionnaire-based study in maternity ward

• **Objective**: To evaluate post-partum women’s awareness and pattern of utilization of Teratogen Information Services in Israel

• **Design**: Face-to-face interviews with postpartum women on the maternity ward, including:
  - prescription and actual use of medications during pregnancy
  - Had any teratologic consultation been provided?
  - “Are you aware of Teratology Information Services in Israel”?
Part 2: results- Interviews with postpartum women

• We interviewed 49 postpartum women

• 16.3% recalled having taken prescription medications during their recent pregnancy, mainly antimicrobial drugs.

• Only 30% were aware of Teratogen Information Services in Israel.
Discussion

• Good adherence: 88-89% of participants initiated the prescription medications, usually within 1 day

• Selection bias?
  - our participants were highly educated (70-84% with academic degree, compared to the average in age-matched population in Israel (46%) or the OECD (42%)

• Almost all participants were Jewish (98.5%): *Language barrier of the IPIC service?*
Discussion (2)

• Half of the women reported that they did not receive adequate safety information.

• Most women were not aware of the existence of TIS.
Conclusion

Raising awareness of the importance of medication safety counseling during pregnancy and lactation among both, physicians and patients, may improve the quality of medical care of pregnant and breastfeeding women in Israel.

Thank you!