Brucellosis in pregnancy

Bosilkovski Mile, PhD
University clinic for infectious diseases and febrile conditions Medical Faculty Skopje
Brucellosis in pregnant animals vs. pregnant women

- Brucellosis causes fewer spontaneous abortions in humans than it does in animals.
  Kurdoglu 2015 ElShamy 2008

The reasons why adverse obstetric outcomes are less frequent in humans:

- Absence of erythrol in the women’s placenta.
- The anti brucellar activity in human amniotic fluid.
Reasons for unfavorable obstetric outcomes in humans

- Maternal bacteremia
- Acute febrile reaction
- DIC
- Placentitis
- Allergic mechanism
- Endotoxemia

ElShamy 2008, Aydin 2013, Kurdoglu 2010
## Risk factor for adverse pregnancy outcomes

<table>
<thead>
<tr>
<th>Group</th>
<th>Spontaneous abortion</th>
<th>IUFD</th>
<th>Preterm delivery</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pregnant with brucellosis (n=55)</td>
<td>15 (27%)</td>
<td>7 (13%)</td>
<td>6 (11%)</td>
</tr>
<tr>
<td>Healthy pregnant (n=395)</td>
<td>60 (15%)</td>
<td>15 (4%)</td>
<td>35 (9%)</td>
</tr>
</tbody>
</table>

ElShamy 2008
## Risk factor for adverse pregnancy outcomes

<table>
<thead>
<tr>
<th>Group</th>
<th>Term delivery</th>
<th>LBW</th>
<th>Preterm delivery</th>
<th>Spont. abort.</th>
</tr>
</thead>
<tbody>
<tr>
<td>40 healthy pregnant</td>
<td>35 (88%)</td>
<td>4 (10%)</td>
<td>1 (2%)</td>
<td>0</td>
</tr>
<tr>
<td>39 pregnant with brucellosis</td>
<td>21 (54%)</td>
<td>10 (26%)</td>
<td>7 (18%)</td>
<td>1 (2%)</td>
</tr>
</tbody>
</table>

Gulsun 2011
Pregnancy incidence in patients with brucellosis

- 19 pregnant in 1245 patients with brucellosis (1.5%).
  Roushan 2011

- 21 pregnant in 342 patients with brucellosis (6%).
  Kurdoglu 2010

- 92 pregnant in 545 cases with brucellosis (17%).
  Khan 2001

- 17 pregnant among 1739 patients with brucellosis (1%).
  Bosilkovski unpublished
A. Obstetric outcomes

- Abortion 3% - 54%
  Gulsun 2011, Mouhamed 1985
- IUFD 0 - 13%
  Roushan 2011, ElShamy 2008
- Premature delivery 7% - 28%
  Kurdoglu 2010, Hackmon 1998
- Term delivery 47% - 100%
  Roushan 2011, Figueroa Damian 1995
B. Outcome for INFANT

INFECTED - congenital / neonatal brucellosis

UNINFECTED

- Death 6% (Khan 2001) 8% (Vilchez 2015)
- LBW 26% (Gulsun 2011) 14% (Vilchez 2015)
- Development delay
- Favorable
- Congenital malformations NO (Gulsun 2011, ElShamy 2008)
Outcome

C. Outcome for pregnant woman

✓ No increased life-threatening risk from brucellosis.
   Gulsun 2011

D. Outcome for environment

✓ Delivery team infection.
   Karcaaltincaba 2010, Mesner 2007, Poulou 2006
Advantages of treatment

Prompt diagnosis and treatment decrease the risk.
Kurdoglu 2015, Roushan 2011, Karcaaltincaba 2010

- Among 13 patients who were treated, four (31%) aborted and nine (69%) had normal term deliveries.
- All 6 untreated women aborted.
Roushan 2011

Rifampin in combination with TMP-SMX for six weeks.
Karcaaltincaba 2010, Bosilkovski unpublished, Roushan 2011
Control and prevention

• In endemic regions:
  ✓ Routine **SCREENING** for brucellosis in pregnancy.
    Cacache 2013, ElShamy 2008

  ✓ **EDUCATING** women of childbearing age.

  ✓ **TESTING** suspicious cases.
    Ali 2016, Bosilkovski unpublished
Conclusions

✓ Brucellosis is **PRESENT** among pregnant women.

✓ The incidence of adverse obstetric outcomes in pregnant women with brucellosis **EXCEEDS** the rates among the general population.

✓ Natural history of brucellosis in pregnant women could be altered by **EARLY ADMINISTRATION** of antibiotics.

✓ In endemic regions screening and education of pregnant women should be compulsory prevention measures.