Iodine status in women after early miscarriages in Czech Republic

J. Jiskra 1, T. Falt 3, R. Bilek 1, J. Bartaková 1, E. Potliková 1, D. Springer 4, Z. Telčka 1, Z. Limanova 1

1 3rd Clinic of Medicine, 1st Faculty of Medicine, Charles University and General University Hospital, 2nd Department of Gynaecology and Obstetrics, 1st Faculty of Medicine, Charles University and General University Hospital, 3rd Institute of Endocrinology, Prague, Czech Republic, 4th Institute of Clinical Biochemistry and Laboratory Diagnostics, 1st Faculty of Medicine, Charles University and General University Hospital

Background

Low iodine intake during pregnancy may cause thyroid dysfunction in pregnant women and their newborn. Moderate-to-severe iodine deficiency during pregnancy often linked by overt/subclinical hypothyroidism or hypothyroxinemia increases rates of spontaneous abortion (SpA), reduces birth weight, increases infant mortality (Zimmermann 2011). It remains unclear if the rate of SpA other complications of pregnancy are affected also by mild maternal iodine deficiency in laboratory euthyroid subject. The aim of the study was to determine iodine status in women after SpA and to compare it with randomly chosen age-comparable control women recruited from general population.

Fig. 1. Urinary iodine concentration in women after spontaneous abortion and controls

Fig. 2. Prevalence of adequate iodine intake among women after spontaneous abortion and controls

Subjects and methods

A total of 183 consecutive women after SpA before 12th week of pregnancy and 118 age-comparable women recruited from general population as controls were included in the study. Women with history of thyroid diseases were excluded. Within 4-12 weeks after SpA all women were examined clinically, laboratory [urinary iodine concentration - UIC (absorption spectrophotometry), serum concentrations of thyroid stimulating hormone - TSH, free thyroxine - FT4, antibodies to thyroid peroxidase - TPOAb, antibodies to thyroglobulin - TgAb]. Among women after SpA, 72 were supplemented by tablets with iodine in prior pregnancy, 73 were not and in 38 the information was not available.

Table. 1. Urinary iodine concentration and thyroid laboratory parameters in women after spontaneous abortion and controls

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Women after SpA (N=183)</th>
<th>Controls (N=118)</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>UIC</td>
<td>92.00 (68.00-113.00)</td>
<td>108.6 (83.5-124.9)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>FT4</td>
<td>14.83±1.80</td>
<td>15.58±1.769</td>
<td></td>
</tr>
<tr>
<td>TSH</td>
<td>1.77 (1.25-2.31)</td>
<td>1.68 (1.09-2.11)</td>
<td>0.110</td>
</tr>
<tr>
<td>Positive TgAb</td>
<td>18 (9.95 %)</td>
<td>21 (11.60 %)</td>
<td>0.735</td>
</tr>
<tr>
<td>Positive TPOAb</td>
<td>18 (9.95 %)</td>
<td>21 (11.60 %)</td>
<td>0.735</td>
</tr>
</tbody>
</table>

Data are expressed as median (interquartile range) for UIC and TSH, mean±standard deviation for FT4 and prevalence of positivity for TgAb and TPOAb.

More than 60 % of women after spontaneous abortion had mild or moderate iodine deficiency determined by urinary iodine concentration, although 39 % of them used iodine-containing vitamin supplements in prior pregnancy.

More than 60 % of women after spontaneous abortion had mild or moderate iodine deficiency determined by urinary iodine concentration, although 39 % of them used iodine-containing vitamin supplements in prior pregnancy.

Conclusions

More than 60 % of women after spontaneous abortion had mild or moderate iodine deficiency determined by urinary iodine concentration, although 39 % of them used iodine-containing vitamin supplements in prior pregnancy.

More than 60 % of women after spontaneous abortion had mild or moderate iodine deficiency determined by urinary iodine concentration, although 39 % of them used iodine-containing vitamin supplements in prior pregnancy.

References


E-mail: jan.jiskra@vfn.cz