PREGNANCY AND HYPERPROLACTINEMIA

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Summary

Research has shown that the risk of a significant growth in tumor volume in micro and especially macroprolactinomas even under control of dopaminergic agonists. Prolactinomas associated with pregnancy can rise serious – sometimes controversial - practical problems. During pregnancy and lactation period the level of seric prolactin can go over 480 ng/ml. The clinic material consists of 6 women with prolactinomas (4 microprolactinomas și 2 macroprolactinomas) diagnosed before pregnancy. They were monitored during pregnancy, evaluated trimestrially by doses of seric prolactin and measurement of visual field. Patients benefitted from medical and surgery treatment. Under individual treatment with bromocryptin and dostinex the level of prolactinemia decreased to accepted limits (30 – 90 ng/ml) especially among microprolactinomas after the first weeks.

Key words: pregnancy. hyperprolactinemia. sterility. dopaminergic agonists

Introduction

During pregnancy, hypophysis undergoes a global process of hyperplasia which starts in the first weeks of pregnancy and goes on until the precocious postpartal period. The estrogen in excess (of placental origin) is responsible both for the incitation of mitotic activity in lactotroph cells and for the synthesis of prolactin. following the activation of estrogenic receivers of the prolactinomas (Bachelot, 2007). During pregnancy and lactation period the level of seric prolactin can be bigger than 480 ng/ml.

Material and methods

The clinic material which has been researched consists of 6 women with prolactinomas (4 microprolactinomas și 2 macroprolactinomas) who have been monitored during pregnancy.

The case study shows that each of them had a prolactinoma which was diagnosed before pregnancy and treated with various dopaminergic agonists.

The 2 macroprolactinomas narrowed concentrically their visual field.

Results

Medical treatment must be done with the help of various dopaminergic antagonists.

These agents are extremely efficient in decreasing the seric level of prolactin in the loss of galactorheea the restauration of gonad functions and the decrease in tumor volume (.Imran, 2007).

Most of the patients react adequately to the treatment of dopaminergic agonists. The decrease in tumor volume has been measured at 80% of the macroadenomas.

Changes of visual field can be improved fairly soon together with the decrease in tumor volume. Sometimes they last longer even if the tumor volume decreases and the optic chiasma decompresses. In such cases a total
recovery of the visual field is impossible even after intervention. Under partial decompressing of optic chiasma the surgery intervention can be prescribed.

The treatment applied led to a level decrease of the seric prolactin in all cases which further led to the growth of gonadotrophs and resuming the ovulation with pregnancy implementation (table 1, figure 1).

During pregnancy the patients were evaluated trimestrially by doses of seric prolactin and measurement of visual field.

Patients whose visual field changed (cases 5 and 6) did not worsen the look while those ones with microprolactinomas did not change their visual field.

Surgery intervention of prolactinomas is ideal for those intolerant to medical treatment in tumors that compress optic chiasma and in tumors with extrasellar expansion.

Hyperprolactinemy can backslide after surgery in 50% of the cases with microprolactinomas which were initially considered to be cured (Hattori, 2003).

Therapy effects are unsatisfying with macroprolactinomas for which the rate of backslide can be above 70% (Valette-Kasic, 2002).

The ideal treatment of prolactinomas must adjust the hypersecretion of prolactin and reduce the tumor mass. Applying therapy methods is burdened by the tumor evolution and by the presence or the absence of neuro-ophtalmological complications.

<table>
<thead>
<tr>
<th>Type of Prolactinoma (ø mm)</th>
<th>Initial level and level after treatment of PRL Ng/ml</th>
<th>Affecting other tropops before pregnancy (FSH and LH)</th>
<th>Visual fields</th>
<th>Doze of bromocryptin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Micro (0.7)</td>
<td>80.3→40</td>
<td>↓</td>
<td>Normal</td>
<td>2.5mg</td>
</tr>
<tr>
<td>Micro (0.8)</td>
<td>248→90</td>
<td>Normal</td>
<td>Normal</td>
<td>12.5mg →20mg</td>
</tr>
<tr>
<td>Micro (0.9)</td>
<td>40.9→30</td>
<td>↓</td>
<td>Normal</td>
<td>2.5</td>
</tr>
<tr>
<td>Micro (0.89)</td>
<td>200→35</td>
<td>↓</td>
<td>Normal</td>
<td>5mg</td>
</tr>
<tr>
<td>Macro (1.5)</td>
<td>250→72</td>
<td>↓</td>
<td>Concentric narrowing</td>
<td>7.5mg</td>
</tr>
<tr>
<td>Macro (1.3)</td>
<td>150→68</td>
<td>↓</td>
<td>Concentric narrowing</td>
<td>5-7.5mg</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type of adenoma</th>
<th>Medical treatment</th>
<th>Surgery treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bromocryptin</td>
<td>Dostinex</td>
<td></td>
</tr>
<tr>
<td>Microprolactinoma</td>
<td>18 (90%)</td>
<td>2 (10%)</td>
</tr>
<tr>
<td>Macroprolactinoma</td>
<td>14 (63.64%)</td>
<td>4 (18.18%)</td>
</tr>
</tbody>
</table>

Figure 1 Values of PRL before and after the treatment
Patients with prolactinomas from the team surveyed benefitted from medical and surgery treatment. From the data presented in table 2 we can see that all microprolactinomas and 81.82% of the macroprolactinomas benefitted from medical treatment. Proportion of 18.18% of the macroprolactinomas were reported to surgery through transphenoidal approach. 90% of the microprolactinomas were administered bromocryptin, in doses between 5 and 25 mg/day. Most of the patients with microprolactinomas received smaller and smaller amounts of bromocryptin 1-3 years later, in dosages of 5-15 mg/day. To administer small amounts of bromocryptin to women with microprolactinomas is beneficial, since the tumor somehow resists the citonecrotic effect of bromocryptin, undeceasing its size together with the reduction and normalizing of prolactinemy.

Discussion

Having been exposed to treatment with bromocryptin and ovulation inductors, six patients were induced a controoled pregnancy.

Control of medical treatment was evaluated through doses of hormones and RMI, and clinically through reestablishing periods, the loss of galactorheea (for women), normalization of spermogram and remitting sexual disfunction (for men). This clinic control was performed periodically within 3-6 months.

Monitoring the dynamics of seric PRL level under treatment with bromocryptin applied to 18 cases with microprolactinomas for 2 years shows a progressive reduction of the hormone concentration. The initial level of the prolactin was 113.82 ± 36.54 ng/ml and 6 months later decreased to 89.80 ± 18.73 ng/ml. A year later its level reached 61.26 ± 14.63 ng/ml and after a two year treatment the average level was 32.30 ± 11.00 ng/ml.

Conclusions

6 patients that show pregnancy associated to a prolactinoma previously diagnosed (4 microprolactinomas and 2 macroprolactinomas) reveal a seric level of PRL that dose not correlate to tumor volume. Under individual treatment with bromocryptin (2.5 – 20 mg/day) the level of prolactinemy decreased to accepted limits (30 – 90 ng/ml) especially among microprolactinomas after the first weeks.

Medical literature refers to 6 parameters potentially useful in a successful treatment: the initial tumor level, the sex, the level of basic prolactinemy, resistance (or intolerance) to treatment of bromocryptin, and previous treatment of bromocryptin (Vârtej, 2003).

The patient’s age has also been taken into account, as it plays an important role in the reaction to treatment. It has been shown that younger men (under 30) are associated with a high rate of resistance to treatment of dopaminergic agonists.

References