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Preterm delivery more frequent in AbTPO(+) women

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Autoimmune chronic thyroiditis (ATD), whether associated with euthyroidism or subclinical hypothyroidism, has been linked to increased risk of miscarriage and preterm delivery, but published data have often been discordant.
A recent article provides new and relevant information (1). In this study, two different cohorts of women in the Netherlands (Generation R = 5924 subjects; Happy Study = 1663 subjects) were tested for TSH, FT4, AbTPO and hCG in the 18th week of pregnancy. Patients with twin pregnancies, fertility treatments, thyroid disease and medications for thyroid disorders were excluded.
The results show a defined difference between subjects AbTPO(+) and AbTPO(-):

- In patients AbTPO(-) the increase in hCG was associated with increase of FT4 and reduction of TSH (tireotropic action of hCG).
- In patients AbTPO(+) the increase in hCG was not associated with increase of FT4 and reduction of TSH: due to the reduced functional reserve of the patients with ATD, the stimulatory action of hCG was ineffective.

The study is adequately powered to confirm the long-standing clinical impression that women with ATD have reduced thyroid functional reserve. During pregnancy, when the requests on the gland increase, the stimulus induced by hCG may not suffice to induce an adequate thyroid response.
The patients AbTPO(+) had a risk of preterm delivery 1.7 times higher than the patients AbTPO(-) ($p = 0.027$), and the preterm delivery rate was inversely related to the levels of FT4 (adjusted for values of hCG): the lower the FT4 level, the higher the preterm delivery rate. Nulliparous women with FT4 one standard deviation below physiologic FT4 concentration had a risk of preterm delivery 6 times higher than controls. On the other end, in patients AbTPO(+) with appropriate response to hCG (physiological increase of FT4), preterm delivery rate did not differ from controls AbTPO(-).
It must also be remembered that:

- The endometrium, the blastocyst and the ovary contain thyroid-dependent molecules. There are, as consequence, molecular bases, which may justify the negative impact that thyroid insufficiency may play in miscarriage and preterm delivery in these patients (2).
- Two recent interventional studies have shown that therapy with levothyroxine in euthyroid AbTPO(+) patients may lead to a significant reduction in the number of preterm deliveries (3,4).

References

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