

INTRODUCTION

Graves's disease is frequent in women, its incidence being 0.1-1% during pregnancy. Both TSH anti-receptor antibodies and the synthetic antithyroid drugs cross the placenta, increasing the risk of hypo- and/or hyperthyroidism.

Objective: to describe the thyroid status of fetus and newborns from women with Graves's disease referred to our Department .

PATIENTS-METHODS

We included children of women affected with Graves's disease referred to the pediatric-endocrinology department of Bicêtre Paris Sud hospital between 2006 and 2017.

Clinical and biological parameters have been recorded during first days of life. Results have been presented as means with intervals [minimum; maximum] at birth or at the treatment's introduction.

The reference range of TSH at birth is 1.5-10 mUI/L and of fT4 is 13.5-34 pmol/l.

RESULTS

12 newborns have been included:

- 7 had hyperthyroidism (TSH : 0.2 mUI/L [0-1.5], fT4 median: 76.2 pmol/L [48-100]),
- 2 of these 7 presented neonatal hypothyroidism (TSH median: 60.2 mUI/L [40.2-84.14], T4 median: 4.65 pmol/L [2.3-7]) that evolved towards hyperthyroidism at days 9 and 10 and 5 had neonatal hyperthyroidism. One of them was treated by L thyroxin during 10 days.
- 1 out of 12 had fetal hypothyroidism but had normal biological parameters at birth,
- 4 had no thyroid anomalies (TSH median 5.6 mUI/L [1.81-7.46] T4 median 17.4 pmol/L [15.2-20.6]).

Synthetic antithyroid drugs were initiated in patients with hyperthyroidism at day 8 [1-14] for a mean duration of 41 days [11-120]: 5/7 with propyl thiouracyl at 5.2 mg/kg/d [1-10], and 2/7 with carbimazole at 1 mg/kg/d.

Their mean level of antibodies was 24.7 UI/L [13-50] compared to 4.55 UI/L [1.3-7.6] in newborns with normal T4 and fT4 ($p=0.01$).

Thyroid's fonction at born	Mean level of TSH (mUI/L)	Mean level of fT4 (pmol/L)	Mean level of antibodies (UI/L)
Neonatal hyperthyroidism	0.2 mUI/L [0-1.5]	76.2 [48-100]	24.7 [13 - 50]
Neonatal hypothyroidism	60.2 [40.2-84.14]	4.65 [2.3-7]	20.6 [19.79-21.6]
Normal	5.6 [1.81-7.46]	17.4 [15.2-20.6]	4.5 [1.3-7.6]

Figure 1: Level of TSH, fT4 and antibodies at born

CONCLUSION

In 11 years, we have had 8 children with a fetal and/or neonatal thyroid dysfunction.

We confirmed the predictive value of the antibody plasma level for the development of hypo- and/or hyperthyroidism.

The French Society of Endocrinology recommends a fT4, TSH and antibodies screening in cord blood, at days 3 and 5 in order to look for hyper- and/or hypothyroidism.

In this cohort, several neonates developed hyperthyroidism after day 5 suggesting that a longer biological follow up may be needed until the disappearance of antibodies.

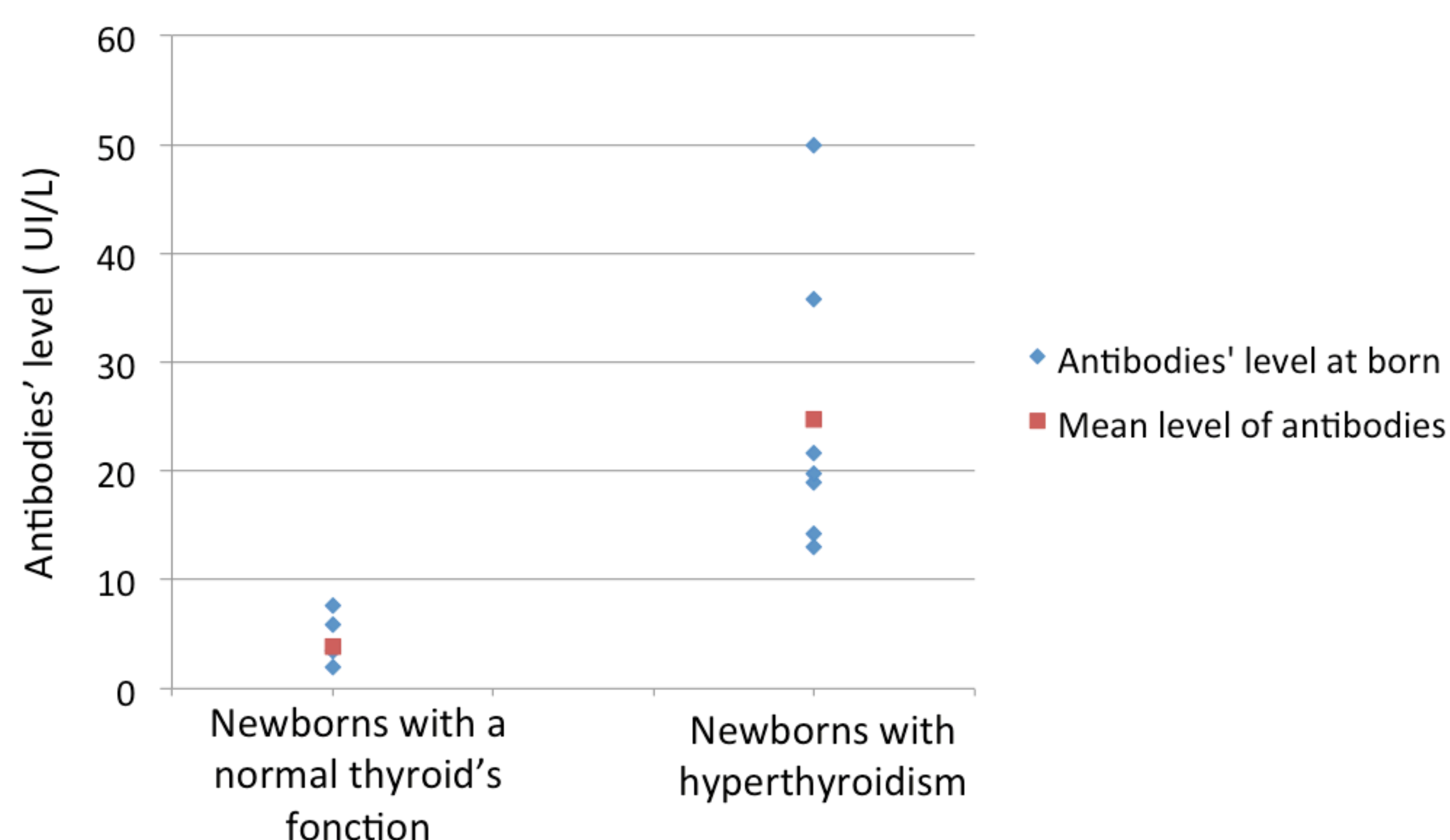


Figure 2: Level of antibodies according to thyroid's fonction at born