



# MEDICAMENTOS ANTITIROIDEOS Y LACTANCIA MATERNA

J Hum Lact 1998 Sep;14(3):206-7

J Hum Lact. 1998 Dec;14(4):289.

**Well-being of a baby breast fed by her mother on carbimazol treatment.**

**Verd S, Cardo E.**

Clin Endocrinol (Oxf) 1991 Jan;34(1):91-8

**Thyroid disease in relation to pregnancy.**

**Lazarus JH, Othman S.**

Lancet 1987 Apr 18;1(8538):928

**Carbimazole and breastfeeding.**

**Rylance GW, Woods CG, Donnelly MC, Oliver JS, Alexander WD.**

Am J Obstet Gynecol 1987 Aug;157(2):234-5

**Antithyroid drugs: to breast-feed or not to breast-feed.**

**Cooper DS.**

Historically, women taking antithyroid drugs generally have not been permitted to breast-feed. However, recent studies suggest that infants exposed to the small amounts of antithyroid drugs in breast milk experience no change in thyroid function. Propylthiouracil is the drug of choice in this situation, since it does not cross membranes readily, and milk concentrations are therefore quite low. However, methimazole in low dosages might be used if the infant's thyroid status was monitored at frequent intervals

**Effect of methimazole treatment of maternal thyrotoxicosis on thyroid function in breast-feeding infants.**

Azizi F.

Endocrine Research Centre, University of Medical Sciences, Tehran, Iran.

In 35 infants of lactating mothers with thyrotoxicosis who were receiving 5 to 20 mg methimazole daily, serum levels of thyroxine, triiodothyronine, thyrotropin were within normal ranges 1 month after the start of breast-feeding. Thyroid function in breast-feeding infants of six lactating mothers receiving methimazole, 20 mg for the first, 10 mg for the second, and 5 mg for an additional 4 months, remained normal. These results suggest the safety of methimazole therapy in lactating mothers.

**Thyroid function in wholly breast-feeding infants whose mothers take high doses of propylthiouracil.**

Momotani N, Yamashita R, Makino F, Noh JY, Ishikawa N, Ito K.

Ito Hospital, Tokyo, Japan. momotani@blue.ocn.ne.jp

**BACKGROUND:** Propylthiouracil (PTU) might theoretically be preferred over methimazole (MMI) during breast-feeding because of its lower milk/serum concentration ratio (0.1 vs. 1.0). The problem is that Graves' disease often relapses during the postpartum period, and high doses of PTU are sometimes needed to control maternal hyperthyroidism) during breast-feeding. However, there are virtually no data on the effects of maternal PTU on thyroid status of infants whose mothers take more than 300 mg PTU daily and who are wholly breast-feeding. **OBJECTIVES:** To investigate whether mothers can breast-feed without adverse effects on infants' thyroid status while taking 300 mg or more daily of PTU. **SUBJECTS AND DESIGN:** Eleven infants who were wholly breast-fed while their mothers took PTU 300-750 mg daily for Graves' hyperthyroidism were included in this study. In one of the 11 infants, the mother also took iodine 6 mg daily for a limited period. Thyroid status in these infants was evaluated. **MEASUREMENTS:** Free T4 (FT4), thyrotrophin (TSH), and TSH binding inhibiting antibody (TBIAb) concentrations were examined at least once in the age range 6 days to 9 months. Maternal blood was also examined for FT4 and TBIAb on the same day, or within a week, of the infants' blood tests. FT4, TSH and TBIAb concentrations at birth were examined, using cord blood,

in cases where antithyroid drugs had been continued through delivery. RESULTS: Three of the 11 infants had TSH concentrations higher than the normal range for adults. In one of the three infants, the TSH concentration, which was determined 19 weeks after birth, was just above the normal range. In the remaining two infants whose mothers had taken PTU through delivery, TSH concentrations, determined within 7 days after birth, were distinctly high, but they became normal while maternal PTU doses were the same as or higher than those at the initial examination. Maternal PTU doses or FT4 concentrations were not significantly correlated with infants' TSH concentrations. CONCLUSION: Mothers can breast-feed while taking propylthiouracil at doses as high as 750 mg daily without adverse effects on thyroid status in their infants.

J Clin Endocrinol Metab 2000 Sep;85(9):3233-8

### **Thyroid function and intellectual development of infants nursed by mothers taking methimazole.**

**Azizi F, Khoshniat M, Bahrainian M, Hedayati M.**

Endocrine Research Center, Shaheed Beheshti University of Medical Sciences, Tehran, I.R. Iran.

For many years, breast-feeding was forbidden if antithyroid drugs were being used. Recently, limited studies have shown the relative safety of propylthiouracil and methimazole (MMI). It is not known whether MMI therapy of lactating mothers for 1 yr is safe for breast-fed infants and does not cause alterations in thyroid function and intellectual development. Between 1988 and 1998, 139 thyrotoxic lactating mothers and their infants were studied. Fifty-one thyrotoxic lactating mothers were treated with MMI during pregnancy, and MMI was continued during breast-feeding. Eighty-eight mothers were given 10 mg MMI (n 46) or 20 mg MMI (n = 42) daily for 1 month, 10 mg daily for the second month, and 5-10 mg daily thereafter. Serum T4, T3, and TSH concentrations were measured in thyrotoxic lactating mothers and their infants, before and at 1, 2, 4, 8, and 12 months. Serum MMI was measured in the infants of thyrotoxic lactating mothers taking 20 mg MMI. Thyroid function, urinary iodine, thyroid antibodies, intelligence quotient (IQ), verbal and functional components (Wechsler and Goodenough tests) were performed on 14 children of thyrotoxic lactating mothers between 48 and 74 months of age and on 17 controls. Mean  $\pm$  SD of FT4I in thyrotoxic lactating mothers treated with 10 mg MMI for 1 month decreased from 19.4  $\pm$  4.1 to 11.6  $\pm$  4.4 and from 20.5  $\pm$  4.7 to 9.8  $\pm$  1.5 when treated with 20 mg MMI. Values for FT3I decreased from 462  $\pm$  52 to 194  $\pm$  52 with 10 mg MMI and from 481  $\pm$  92 to 171  $\pm$  38 with 20 mg MMI. FT4I and FT3I were normal from the third to the twelfth months. In all infants FT4I, FT3I, and TSH concentrations were normal before and up to 12 months of MMI therapy in their lactating mothers. The lowest T4 and T3 values were 108 and 1.87 nmol/L, and the highest TSH value was 4.0 mU/L. Serum MMI levels in infants were less than 0.03 microg/mL. Six mothers receiving 20 mg MMI had increased serum TSH concentrations ranging from 26-135 mU/L.

after 1 month of treatment. Their infants were euthyroid with serum TSH values less than 2.6 mU/L. At 48-74 months of age, height, weight, FT4I, FT3I, TSH, and antithyroid antibody titers were not different than controls. The mean IQ was 107 +/- 14 vs. 106 +/- 16 (Goodenough test) and 103 +/- 10 vs. 103 +/- 16 (Wechsler test) for infants of thyrotoxic lactating mothers and control infants, respectively. Similarly, there was no difference in verbal and performance IQ and their components between infants of thyrotoxic lactating mothers and control children. No deleterious effects occur in thyroid function and physical and intellectual development of breast-fed infants whose lactating mothers were treated with doses of MMI up to 20 mg daily.

J. Endocrinol Invest 2002 Jun;25(6):493-6

### **Thyroid function in breast-fed infants whose mothers take high doses of methimazole.**

**Azizi F, Hedayati M.**

Endocrine Research Center, Shaheed Beheshti University of Medical Sciences, Tehran, I.R. Iran. azizi@erc-iran.com

Recently, a few studies have shown the safety of methimazole (MMI) therapy of thyrotoxic lactating mothers on thyroid function of their infants. However, it is not known whether the effect of moderately high doses of MMI therapy on lactating mothers can be dangerous for breast-fed infants. Eighty-eight thyrotoxic lactating mothers and their infants were studied. 46 received 20 mg MMI and 42 were given 30 mg MMI during the first month, 10 mg for the second and 5-10 mg for additional 10 months of therapy. Serum T4, T3 and TSH concentrations and in hyperthyroid MMI treated mothers and their RT3U were measured in hyperthyroid MMI treated mothers and their infants, before and at 1, 2, 6, and 12 months after initiation of therapy. Serum MMI was measured in the infants of thyrotoxic mothers taking 20-30 mg MMI. Mean +/- SD of free T4 index (FT4I) in thyrotoxic mothers treated with 20 and 30 mg MMI for one month decreased from 20.1 +/- 4.2 to 9.7 +/- 1.5 ( $p < 0.001$ ) and from 20.6 +/- 4.8 to 8.6 +/- 3.0 ( $p < 0.001$ ), respectively. Values for free T3 index (FT3I) decreased from 587 +/- 53 to 180 +/- 39 ( $p < 0.001$ ) and from 610 +/- 49 to 151 +/- 31 ( $p < 0.001$ ) in those treated with 20 and 30 mg MMI, respectively. By the end of one month 5 had elevated FT4I or FT3I or both and 12 had elevated TSH. The dose of MMI was adjusted and thyroid function remained normal up to 12 months of MMI therapy in thyrotoxic lactating mothers. Serum T4, T3 and TSH concentrations of breast-fed infants were normal before and up to 12 months of MMI therapy of their breast-feeding mothers. The lowest T4 and T3 and the highest TSH values were 101 nmol/l, 1.8 nmol/l and 4.1 mU/l, respectively. Serum MMI levels were <0.03 in 7 and 0.03, 0.034 and 0.035 microg/ml in the other 3 infants. We conclude that the treatment of hyperthyroid lactating mothers with doses of 20-30 mg MMI day does not cause deleterious effects on thyroid function of their breast-fed infants.

### **Iodine-131 elimination from breast milk: a case report.**

**Saenz RB.**

Department of Family Medicine, University of Mississippi Medical Center,  
2500 North State Street, Jackson, MS 39216, USA.

This case report describes the management of a breastfeeding mother who had been given radioactive iodine and technetium for diagnosis of thyroid disease. The mother requested to submit weekly milk samples for monitoring of radioactivity. Once activity fell below measurable counts, the mother resumed lactation.

Pediatrics 2000 Jul;106(1 Pt 1):27-30

### **Choice of breastfeeding and physicians' advice: a cohort study of women receiving propylthiouracil.**

**Lee A, Moretti ME, Collantes A, Chong D, Mazzotta P, Koren G, Merchant SS, Ito S.**

Motherisk Program, Division of Clinical Pharmacology and Toxicology, Hospital for Sick Children and the Department of Pediatrics, University of Toronto, Toronto, Ontario, Canada.

**OBJECTIVE:** To examine the gap between the current social/medical practice and the evidence-based recommendation in favor of breastfeeding during maternal propylthiouracil (PTU) therapy. **DESIGN:** Prospective, observational, cohort study. **SUBJECTS:** Women requiring PTU during pregnancy, and endocrinologists and family physicians in Ontario, Canada. **INTERVENTIONS:** Questionnaire. **MAIN OUTCOME MEASURES:** Women were interviewed postpartum regarding their choice of infant feeding method and relevant advice received from physicians. Physicians were questioned about their advice to nursing women receiving PTU. **RESULTS:** Of 78 women, 66 had live births. Thirty-six required PTU postpartum (group 1), and 30 did not (group 2). Thirty-six healthy women served as controls (group 3). Breastfeeding initiation rates for groups 1, 2, and 3 were 44%, 83%, and 83%, respectively. In group 1, 15 women who breastfed received advice from 22 physicians regarding breastfeeding (20 in favor, 1 against, and 1 equivocal). Eleven who formula fed received advice from 17 physicians (4 in favor, 12 against, and 1 equivocal). A logistic regression analysis of group 1 showed that physicians' advice was the only significant predictor of the woman's choice to breastfeed during PTU therapy (relative risk: 5.48; 95% confidence interval: 1.28-23.40). The physician survey showed that 44% of endocrinologists do not recommend breastfeeding during PTU therapy. **CONCLUSIONS:** A substantial proportion of the lactating patients on PTU still receive advice against breastfeeding from their physicians. Physicians' advice and attitudes toward breastfeeding during PTU therapy are a

major factor in women's final decision to breastfeed. Physicians' compliance with evidence-based data will facilitate breastfeeding in this group. propylthiouracil, breastfeeding, decision-making.

Clin Endocrinol (Oxf) 1989 Nov;31(5):591-5

**Recovery from foetal hypothyroidism: evidence for the safety of breast-feeding while taking propylthiouracil.**

**Momotani N, Yamashita R, Yoshimoto M, Noh J, Ishikawa N, Ito K.**

Ito Hospital, Tokyo, Japan.

We assessed the post-natal thyroid function in eight infants of mothers with Graves' disease whose thyroid function at birth was suppressed by maternal ingestion of propylthiouracil during pregnancy. These mothers continued taking propylthiouracil after delivery and breast-fed exclusively (two mothers supplemented their breast milk with a small amount of baby food). The cord free T4 level was slightly but uniformly below the normal range in all eight infants, and the cord TSH level was above the normal in seven infants. The dose of propylthiouracil after delivery ranged from 50 to 300 mg daily, which was equal to, or higher than, that before delivery. All these abnormal values normalized in the infant after birth. Serum samples, from seven of the eight mothers, taken at delivery were examined for TSH receptor antibodies; all were positive. The antibody titre, however, was too low, and/or free T4 and TSH levels were examined too long after delivery, for the antibodies to be the cause of the restoration of the infants' thyroid function. These results assure the safety of breast-feeding for the infants of mothers with Graves' disease taking propylthiouracil.

CMAJ 1987 Oct 15;137(8):701-2

**Propylthiouracil and breast-feeding.**

**Goldman JM.**

Clin Nucl Med 1986 Apr;11(4):249-50

**Should a woman taking propylthiouracil breast-feed?**

**McDougall IR, Bayer MF.**

Thyroid function was tested in mother and her son. The mother was taking propylthiouracil for treatment of hyperthyroidism, and she was breast-feeding. Thyroid function was normal in both.