mothers without thyroid pathology. Substantial abnormalities were observed in the health of the majority of newborns with transient hypothyroidism (92.6%), which was manifested in a high frequency of diseases specifically in the perinatal period. The thyroid function returned to normal until the end of the second month in 70.4% cases of newborns with transient hypothyroidism, and in the rest of the cases normalized in months 5-6.

CONCLUSION: Maternal supplementation with iodide through gestation in the region with moderate iodine deficiency normalizes biochemical criteria of excessive thyroidal stimulation, reduces the number of complications and risk for disturbance of foetus and child's development.

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THYROID VOLUME IN PREGNANT WOMEN IN SOUTH BRAZIL: INFLUENCE OF FAMILY HISTORY OF THYROID DISEASE

SOARES, ROSANE; MANICA, DENISE; B. DORNELES, LUCIANO; LENHARDT, SANDRA CRISTINA; L. RESENDE, VINICIUS; P.A.FURTADO, ALVARO; WEBER FURLANETTO, TANIA
Universidade Federal do rio Grande do Sul, Canoas, Brasil

Several factors are known to influence thyroid volume (TV) during pregnancy. To our knowledge, no data have been reported on TV in healthy pregnant Brazilian women.

Objective: To assess TV in pregnant women, and its associated factors.

Design: cross-sectional study.

Study Group: 46 healthy pregnant women with no history of thyroid disease, living in Porto Alegre, a southern Brazilian city.

Measurements: age, gestational age, weight, height, family history of thyroid disease (FHTD), smoking habits, total duration of previous oral contraceptive use, and parity; TSH, free T_4 and Tg serum levels, and urinary iodine levels (UI); and TV, as measured by ultrasound. All subjects were evaluated after completing the 21st week of pregnancy.

Results: There was no correlation between age (mean: 27.8 $\pm$ 6.17 years), gestational age (mean: 29.2 $\pm$ 5.42 months), height (mean: 162.2 $\pm$ 6.17 cm), weight (mean: 67.9 $\pm$ 10.39 kg), body surface area (mean: 1.75 $\pm$ 0.14 m^2), body mass index (mean: 25.8 $\pm$ 3.87 kg/m^2), cigarette smoking (10/46), and total duration of previous oral contraceptive use (median: 80; P25: 12; P75: 126 months) and TV (mean: 8.4 $\pm$ 3.39 mL). TV was correlated to FHTD ($p = 0.017$). 10/46 women had FHTD. Mean TV was 7.74 $\pm$ 2.64 mL in women with negative FHTD, and 10.90 $\pm$ 4.58 mL in women with positive FHTD ($p = 0.008$). Further analysis will include TSH, free T_4 and Tg serum levels, and UI.

Discussion: Factors such as age, body surface area, BMI, parity, and cigarette smoking are thought to influence thyroid size in women. We were not able to show these correlations, possibly due to small sample size, and low parity. An association of TV with FHTD was expected, due to genetic factors. It suggests that environmental factors are less relevant, or are more uniform, in this population. The influence of serum TSH levels and UI are going to be studied after completing the collection of data.

CONCLUSION: Preliminary data analysis has shown an association between TV and FHTD, in healthy pregnant women in South Brazil, after the 21st week of pregnancy.

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DIFFERENTIAL UPTAKE AND SIGNALING OF MOLECULAR IODINE (I_2) IN LACTATING, VIRGIN, OR NEOPLASTIC MAMMARY GLANDS

GARCIA-SOLIS, PABLO; DELGADO, GUADALUPE; ANGUIANO, BRENDA; ACEVES, CARMEN
Depto. de Neurobiología Celular y Molecular. Instituto de Neurobiología, UNAM. México

Previously we showed that chronic treatments of rats with I_2 inhibited N-methyl-N-nitrosourea (MNU)-induced mammary carcinogenesis, and that this treatment down-regulated expression of the mRNAs for the sodium/iodide symporter (NIS) and thyroperoxidase (TPO) in thyroid, but had no effect on NIS in mammary gland (MG). To learn more about the physiological role of I_2 we analyzed its uptake and signaling in thyroid and MG of virgin (with or without MNU-induced mammary tumors) and lactating rats. Uptake assay: control and 2h-pretreated with either ClO_4^- or ClO_4^- plus furosemide, an inhibitor of pendrin (PEN), female rats (virgin and lactating) were injected i.p. with either ^{125}I or $^{125}I_2$. Thyroid, MG, blood, and liver were analyzed 2h after injection. Signaling response: Lactating rats were given KI or I_2 (0.05% in tap water) for 1 and 6 days, whereas virgin rats (control or treated with MNU) received iodine treatments for 4 months. Serum T_3 levels were analyzed by RIA, and mRNA expression for NIS, PEN, TPO, and lactoperoxidase (LPO) by semiquantitative RT-PCR. The uptake of both ^{125}I and $^{125}I_2$ by thyroid from both lactating and virgin rats was inhibited more than 86% by ClO_4^-, whereas treatment with ClO_4^- plus furosemide increased the inhibitory effect to 96%. The inhibitors had similar effects on uptake of both iodine species in lactating MG, but they had no effect on uptake of ^{125}I or $^{125}I_2$ by the MG of virgin rats. In lactating rats both KI and I_2 treatments for 1 and 6 days inhibited mRNA expression of NIS and TPO in thyroid but had no effect in MG. Mammary tumors did not express LPO; PEN was expressed in only 20% of the tumors analyzed, and its expression seemed to be independent of I_2 treatment. NIS expression was significantly stimulated in the I_2-treated tumors. The serum T_3 concentration was not modified by any of the treatments.

CONCLUSION: 1) I_2 is differentially taken up by lactating, virgin, and neoplastic MG, suggesting the existence of mammary iodine uptake pathways in addition to NIS and PEN. 2) Gene expression of thyroid and MG is differentially regulated by I_2. Partially supported by CONACYT (44976-M). Garcia-Solis is supported by graduated fellowships from CONACYT and DGEP-UNAM. Juriquilla, Queretaro, México.

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MOLECULAR ANALYSIS OF DUOX-2 GENE IN PATIENTS WITH CONGENITAL HYPOTHYROIDISM WITH PARTIAL (PIOD) OR TOTAL IODIDE ORGANIFICATION DEFECT (TIOD)

GALRÃO, ANA L.; PARDO, VIVIANE; RUBIO, ILEANA G. S.; KNOBEL, MEYER; NEVES, SOLANGE; MONTEIRO, MARIA; CHAGAS, CARLOS; DIAS, VERA; MEDEIROS-NETO, GERALDO
Universidade de São Paulo (GAL, PV, RIGS, KM, NS, MM, MNG), Universidade Federal de Minas gerais, Minas Gerais (CC, DV), Brasil

Several genetic defects are associated with congenital hypothyroidism (CH). Mutations of the TPO gene have been reported to be the most severe and frequent defect in thyroid biosynthesis caus-