

MON-LB84

Background: Thyroid nodules are exceedingly common, leading to costly interventions for many lesions that ultimately prove benign. Therefore, a reliable, noninvasive method to identify which nodules warrant fine needle aspiration and/or follow-up on the basis of a reasonable likelihood of malignancy is highly desirable. American College of Radiology (ACR) created a standard terminology (lexicon) to describe all thyroid nodules on sonography and standardized TI-RADS risk-stratification system to identify nodules that warrant biopsy and/or follow-up. Many healthcare institutions including UPMC adapted the TI-RADS scoring system in order to identify most clinically significant malignancies while reducing the number of biopsies and follow-up ultrasounds performed on benign nodules. According to ACR, TI-RADS category 3 nodules <1.5 cm and TI-RADS category 4 nodules <1 cm do not warrant follow-up imaging. There are no validation studies on TI-RADS follow-up recommendations.

Methods: We completed a retrospective chart review from UPMC endocrine surgery thyroid nodule database from 2002 to 2012. We identified 57 nodules that showed a change in size during follow-up and had surgical data. Patient demographics, nodule baseline TI-RADS category, size, follow-up volume change and histopathological data were recorded. We reviewed ultrasound images and calculated TI-RADS category at baseline and during follow-up.

Results: TI-RADS category 1-2 (TR1 and TR2) nodules (n=4) did not show any change in size over an average of 6.5 years confirming the recommendations that TR1 and TR2 nodules do not need follow-up. TI-RADS category (TR3) nodules (n=22) showed an average 225% change in volume over 4 years of follow-up. TR3 nodules <1.5 cm showed 397% volume change; 3 out of 15 (20%) nodules that showed a change in size proved to have thyroid cancer >1cm.

TI-RADS category (TR4) nodules (n=31) showed a 786% volume change over 2.6 years of follow-up. TR4 nodules <1 cm, 5/14(35%) proved to have thyroid cancer >1 cm in follow up.

Conclusions: TR1 and TR2 nodules did not show thyroid cancer during follow-up validating ACR recommendations not to follow these nodules. 3/15(26.5%) TR3 nodules <1.5 cm that showed a change in volume proved to have thyroid cancer. 5/14(35%) TR4 nodules <1cm that changed in volume were found to have thyroid cancer. Further studies are needed to identify nodules that require follow-up in order to decrease the misdiagnosis of thyroid cancer.

Neuroendocrinology and Pituitary**ADVANCES IN NEUROENDOCRINOLOGY****Increased In Vivo Pulsatile LH Secretion and Hypothalamic Kisspeptin, NKB, and Dynorphin RNA Levels in a PCOS-Like Mouse Model**

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SUN-LB50

Polycystic ovary syndrome (PCOS) is a reproductive disorder in women characterized by hyperandrogenemia, anovulation, cystic ovaries, and LH hyper-pulsatility, but

the mechanisms causing the pathophysiology remain incompletely understood. We recently reported a novel mouse model that recapitulates the majority of PCOS phenotypes in adulthood. Females given constant, long-term letrozole to reduce aromatase activity demonstrate PCOS-like phenotypes, including polycystic ovaries, anovulation, elevated circulating testosterone, and increased LH. *In vivo* LH pulsatile secretion, which is greatly elevated in PCOS women, was not previously studied, nor were possible changes in reproductive neurons known to control GnRH/LH secretion. Here, we used recent technical advances in the field to examine *in vivo* LH pulse dynamics of freely-moving LET female mice versus control and ovariectomized (OVX) mice. We also studied whether hypothalamic gene expression of several important reproductive regulators, kisspeptin, neurokinin B (NKB), and dynorphin, is altered in LET females. Compared to controls, LET females exhibited very rapid, elevated *in vivo* LH pulsatility, with increased pulse frequency, amplitude, and basal levels, similar to PCOS women. LET mice also had markedly elevated *Kiss1*, *Tac2*, and *Pdyn* expression along with increased *Kiss1* neuron activation in the hypothalamic arcuate nucleus. Although elevated, most hyperactive LH pulse parameters and increased arcuate mRNA measures of LET mice were significantly lower than in OVX littermates. Our findings demonstrate that LET mice, like PCOS women, have markedly elevated LH pulsatility which likely drives increased ovarian androgen secretion. Increased arcuate kisspeptin and NKB levels may be fundamental contributors to the enhanced stimulation of LH pulse secretion in this PCOS-like condition, and perhaps, in some PCOS women.

Healthcare Delivery and Education**EXPANDING CLINICAL CONSIDERATIONS FOR PATIENT TESTING AND CARE****Evaluating the Impact of a New Intake Process for British Columbia Children's Hospital Gender Clinic**

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Our pediatric Gender Clinic is receiving a growing number of referrals, yet continues to operate with limited resources. To try to address this issue, a new clinical pathway was developed in 2017, which included an inter-professional assessment clinic run by nurses and social workers as the entry point for new referrals (known as 'intake appointments'). These visits help to identify those youth who require urgent access to care (i.e. for imminent puberty), wayfinding to community supports and providers who can complete GnRH analog and hormone-readiness assessments, and information about potential medical interventions. The goals of this study were to (1) map out current processes, (2) evaluate wait times for patients referred in 2015-2016 (pre-intake) and 2018-2019 (post-intake), and (3) describe referral patterns and outcomes. Patients referred in 2017 were excluded, as this was a transitional year. In 2015-2016, 222 referrals were received, compared to 407 referrals in 2018-2019. Of the post-intake cohort, to date, 202/407