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DIVISION OF ENDOCRINOLOGY AND METABOLISM

Inside This Edition

CME Credit

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An Unusual Case of Hyperthyroidism During Pregnancy

Case History

A 30-year-old Gravida 3 Para 2 African-American patient was referred to endocrinology at 8 weeks of pregnancy with abnormal thyroid function tests in the setting of hyperemesis gravidarum. She was being followed by obstetrics for severe nausea and vomiting, with a 15-pound weight loss despite the use of multiple anti-emetics. Her past medical history was significant for well-controlled asthma without any history of known thyroid problems. Previous pregnancies resulted in full-term live births with C-sections without any pregnancy-related complications. She was a former smoker who quit six years ago. Pertinent family history was significant for hypothyroidism in a maternal aunt and thyroid surgery in another aunt for unclear reasons. Her medications included prenatal vitamins and four antinausea medications to be taken as needed (doxylamine 25 mg, promethazine 25 mg, prochlorperazine 10 mg, and ondansetron 4 mg). She had no known allergies to medications.

Upon initial evaluation at our endocrinology clinic, she was 8-weeks pregnant and was experiencing the following: nausea, vomiting 6 to 8 times/day, insomnia, loose stools, tremors, anxiety, palpitations, increased sweating, and ongoing weight loss. Her thyroid was not enlarged and was without nodules, swelling, or tenderness. An eye examination showed no evidence of lid lag, retraction, or exophthalmos. Her initial thyroid function profile (Table 1) revealed a suppressed TSH of 0.01 mIU/L and a free T4 of 2.5 ng/dL. Ultrasound imaging of the thyroid gland revealed homogenous right and left thyroid lobes with top-normal size measuring 5.7 x 1.6 x 1.8 cm and 5.9 x 1.6 x 1.6 cm, respectively. No discrete thyroid nodules or lymph nodes were identified, and there was no hypervascularity. Thyroid stimulating immunoglobulin and thyroid peroxidase antibodies were negative. She was diagnosed with hyperthyroidism of pregnancy mediated by hCG in the setting of hyperemesis gravidarum. Graves' hyperthyroidism was ruled out based on examination, serology, and imaging.

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Table 1

Thyroid function tests (normal values)	Initial presentation (8 weeks of pregnancy)	ED presentation (11 weeks of pregnancy)	Outpatient follow-up (16 weeks of pregnancy)	Postpartum follow-up
TSH (0.30-5.0 mIU/L)	0.01	0.54	0.01	0.48
Free T4 (0.89-1.78 ng/dL)	2.5	6.56	0.8	0.8

An Unusual Case of Hyperthyroidism During Pregnancy *Continued from Page 1*

Due to the severity of symptoms and elevated free T4, she was prescribed propylthiouracil 50 mg by mouth three times daily. Three weeks later (at 11 weeks of pregnancy) she presented to the emergency department with ongoing vomiting, inability to take anything by mouth, and severe dehydration. She was afebrile but hypotensive (BP 80/50 mm Hg) and tachycardic (pulse 158 bpm) at presentation. She was lethargic on examination with dry mucous membranes and fine tremors bilaterally. Laboratory evaluation revealed transaminitis with AST 924 IU/L (14-51 IU/L) and ALT 240 IU/L (15-41 IU/L), hyperbilirubinemin with total bilirubin of 4.9 mg/dL (0.3-1.5 mg/dL), and further worsening of her free T4 (6.56 ng/dL).

She was admitted for fluid resuscitation and monitoring. Despite adequate rehydration, she remained tachycardic with a heart rate in the 120s and also had tremors, palpitations, and anxiety. She was started on beta-blockers, cholestyramine, and steroids. She was also started on methimazole at discharge with close outpatient monitoring. The patient started to improve clinically with normalization of her thyroid over the next few weeks. She was subsequently taken off methimazole at 16 weeks of pregnancy. She eventually had a normal pregnancy with delivery of a healthy baby boy at 38 weeks. There was no biochemical or clinical evidence of thyroid disease 6 weeks postpartum.

Discussion

We present here an unusual case of overt symptomatic hyperthyroidism during early pregnancy with negative evaluation for Graves' disease. Graves' hyperthyroidism accounts for 85% of all cases of overt hyperthyroidism during early pregnancy, affecting 2 in 1000 pregnancies.[1] The remaining cases of hyperthyroidism during early pregnancy are usually hCG-mediated and are mild and self-limiting, commonly categorized as gestational transient thyrotoxicosis. Hyperemesis gravidarum presents a unique category of hCG-mediated thyrotoxicosis that typically does not result in overt hyperthyroidism and does not require specific treatment.[2] The mechanism underlying hyperthyroidism in patients with hyperemesis is directly linked to the considerable homology in the beta-subunit of hCG and TSH, both of which belong to the same family of glycoprotein hormones. As a result, hCG has weak thyroid-stimulating activity and patients with hyperemesis gravidarum are known to have higher hCG levels, thus driving hyperthyroidism.[3]

Our case is unique since our patient with hyperemesis gravidarum had clinical signs and symptoms of overt hyperthyroidism that worsened despite propylthiouracil therapy, resulting in an admission to the hospital and the need for emergency therapy with alternative treatments. There is limited guidance in the literature for this specific scenario. Transient hyperthyroidism of hyperemesis gravidarum has been described in a few cohort studies. Tan et al. reported a series of 53 patients who were admitted with hyperemesis gravidarum and found to be biochemically hyperthyroid. None of these cases had clinical symptoms of hyperthyroidism and thus required no specific treatment. Free T4 normalized by 15 weeks of gestation in the majority of cases.[4]

Hyperthyroidism during pregnancy is not without its risks. Overt, uncontrolled hyperthyroidism during pregnancy has been associated with spontaneous abortion,

premature labor, preeclampsia, still birth, low birth weight, and heart failure, among other things.[5] Although hyperemesis related to hyperthyroidism has not been reported to require treatment, the severity of hyperthyroidism and the overt symptomatology in our patient was clearly unusual and warranted immediate treatment to reduce the risk of adverse outcomes.

The use of antithyroid medications in this patient posed a therapeutic challenge. Given the risk of teratogenicity associated with methimazole in the first trimester, propylthiouracil is the preferred agent.[6] Our patient had increased liver enzymes on presentation to the ED, which could be related to propylthiouracil exposure or ischemic liver injury from hypotension, prohibiting the further use of this agent. She continued to be significantly hyperthyroid, both clinically and biochemically, and other safe pregnancy options were considered. She was started on steroids, which inhibit the peripheral conversion of T4 into T3.[7] She was also started on beta-blockers for control of her tachycardia and other adrenergic symptoms. Cholestyramine was also added, which reduces the reabsorption of metabolized thyroid hormone from enterohepatic circulation and is safe in pregnancy.[7] Despite maximizing therapy with these agents, control of hyperthyroidism in this patient remained difficult. After discussion with obstetrics, the decision was made to initiate methimazole therapy given the severity of her hyperthyroidism. The successful use of plasmapheresis for severe Graves' thyrotoxicosis during pregnancy has also been described.[8] This option was considered for our patient, however, a downward trend in her free T4 was noted and therefore methimazole was continued.

Our patient was discharged from the hospital on methimazole therapy, which she only required for a few more weeks. The patient did not have any further evidence of hyperthyroidism during the latter half of her pregnancy or postpartum period, confirming our diagnosis of hyperemesis-related thyrotoxicosis rather than Graves' disease.

Conclusion

In summary, this report describes an unusually severe presentation of hyperemesis gravidarum-related thyrotoxicosis, which posed a diagnostic as well as therapeutic challenge in the face of scarce literature and guidelines. Therapeutic options such as thionamides, steroids, and cholestyramine might be needed for management of severe hyperthyroidism related to hyperemesis of pregnancy in order to ensure maternal and fetal well-being, and to reduce the risk of thyrotoxicosis-related complications during pregnancy.

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Hira Ali, MD
Fellow, Division of Endocrinology and Metabolism

Hussain Mahmud, MD
Clinical Assistant Professor of Medicine, Division of Endocrinology and Metabolism

The University of Pittsburgh's Center for Metabolism and Mitochondrial Medicine:

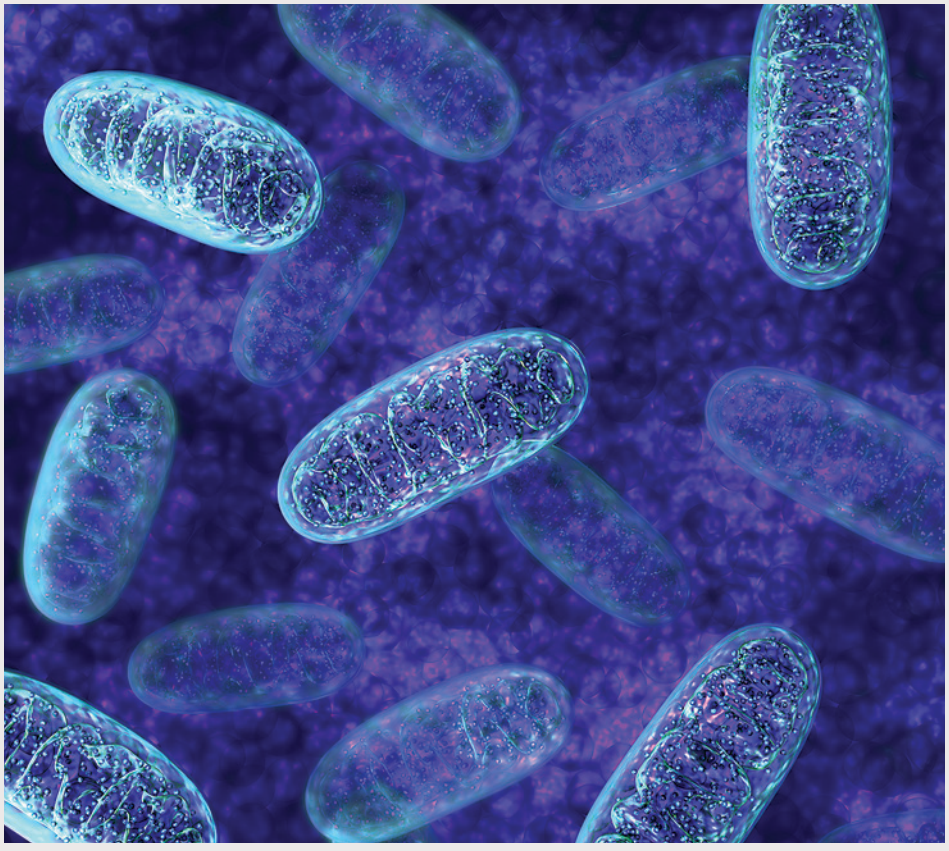
A Multidisciplinary Approach to Translating Basic Biomedical Discoveries Into Clinical Practice

Over the last decade and a half, the biomedical research landscape has changed substantially. The complexity of biomedical research has required a far greater emphasis on cross-disciplinary integration of research programs and team science, while there has been a substantial push to translate basic research breakthroughs into real world treatments in the clinic. In recognition of these trends, the Division of Endocrinology and Metabolism, in partnership with the Vascular Medicine Institute (VMI) and the Department of Medicine (DoM), established the Center for Metabolism and Mitochondrial Medicine (C3M) in 2014 with a commitment of $6 million.

The mission of the C3M is to facilitate and support ongoing basic and clinical research, and initiate novel research that addresses the role of metabolism and mitochondria in normal physiology and disease, with the ultimate goal of translating this knowledge into improved strategies for disease prevention, diagnosis, and therapy. To accomplish its mission, the C3M:

- Invests in platform technologies
- Recruits new faculty
- Provides personnel, technical, and financial resources for the development of specific projects
- Sponsors scientific meetings and visiting speakers

Furthermore, C3M provides an institutional focal point for investigators whose research in the area of metabolic and/or mitochondrial diseases would benefit from collaborations with a like-minded group of investigators. Currently, the C3M is composed of a multitalented, cross-disciplinary faculty drawn from a range of institutes, departments, and divisions within the School of Medicine, including Endocrinology and Metabolism, Cardiology, and Pulmonary divisions of the DoM, the VMI, the University of Pittsburgh Cancer Institute (UPCI), Children's Hospital of Pittsburgh of UPMC, the Department of Pharmacology and Chemical Biology, and the Department of Microbiology and Molecular Genetics. Together, these investments of financial and human capital have resulted in the C3M being able to support, since 2015, 51 grant applications, including 39 NIH R01 applications, 22 publications, and 67 independent investigators.



Both rodent and human research is supported by the platform technologies made available through C3M. Thus, a Columbus Instruments CLAMS system (soon to be augmented by a state-of-the-art SABLE system) for mice, with equivalent metabolic chambers for human studies, is used to assess metabolic rate. Likewise, EchoMRI and NMR is available for the analysis of body composition in mice and humans, while Seahorse XF Analyzers and Oroboros platforms are offered for the analysis of mitochondrion function in human and rodent tissues. These platforms are augmented by equipment for the execution of exercise studies in mice and humans,

including the concurrent measurement of metabolic rate, and bomb calorimetry is available for the measurement of fecal caloric content. In addition to the provision of these platforms, C3M also provides clinical expertise for the execution of experiments and analysis of data. Outstanding examples of this include hyperinsulinemic euglycemic clamps and related "clamp" approaches, which are used to assess whole body and tissue-specific insulin sensitivity in vivo in healthy, obese, and diabetic mouse models and humans. Expertise for the isolation of skeletal muscle, hepatocytes, adipocytes, and islets of Langerhans, and their use in ex vivo experiments, is also available.

While C3M has achieved substantial success during the last three years, the Division of Endocrinology and Metabolism is not resting on its laurels. Quite the opposite. The division, again in partnership with the DoM and VMI, has committed to a further three years of support for C3M. A central goal of C3M in the next growth phase will be to increase the strength of partnerships with other research centers of excellence at the University of Pittsburgh, this again being a goal that is underpinned by the desire to accomplish the growth of cross-disciplinary research and integration of technological platforms. The first piece in this puzzle was the move in winter 2017 of the division to a new, completely renovated research space on the 10th floor of the Biomedical Science Tower, adjacent to a number of other departments, including Immunology, Pharmacology and Chemical Biology, and the VMI. Included in this space is a purpose-built vivarium, a rodent surgery suite, and dedicated space for the housing of metabolic chambers and execution of in vivo studies, such as glucose clamps. We believe these will prove to be a substantial resource in the development of the C3M (and of course the division in general). Indeed, the division has already reached an agreement to partner with the Aging Institute of UPMC Senior Services and the University of Pittsburgh to purchase a 16-cage SABLE metabolic chamber unit for the C3M that will be housed in Endocrinology and Metabolism space. Additionally, in partnership with the Metabolomics Center (based in the Department of Pharmacology and Chemical Biology), the Center for Medicine and the Microbiome, and the Aging Institute, the C3M is spearheading a metabolomics initiative with the goal of offering capabilities in the biased and unbiased analysis of metabolic pathway flux and intermediary metabolites. More immediately, in October 2017, the C3M will host the sixth annual Translational Research in Mitochondria, Aging, and Disease Symposium, a combined effort of C3M and the University of Pittsburgh Cancer Institute (UPCI) that brings together researchers from the University of Pennsylvania, Pennsylvania State University, and the University of Pittsburgh with an interest in mitochondrial biology and metabolism.

In conclusion, the C3M was formed in recognition of the recent rapid changes in the structure and complexity of biomedical research; the need to offer a comprehensive suite of expertise and platforms in the area of metabolic research to a broader scientific base that lacks expertise in this arena; and the need for endocrinology and metabolic research to more closely integrate with other disciplines. C3M reflects the desire, ambition, and commitment of the Division of Endocrinology and Metabolism at the University of Pittsburgh to remain at the forefront of scientific advances and their medical application far into the future.

For additional information, please visit the C3M website at **http://www.vmi.pitt.edu/c3m/**.

Robert M. O'Doherty, PhD
Professor of Medicine,
Division of Endocrinology
and Metabolism

Preparing Adolescents and Young Adults for Lifelong Diabetes Management

If being a teenager is no picnic, being a teenager with type 1 diabetes (T1DM) can be downright challenging. Adolescents and young adults with diabetes experience significant physical, psychological, and situational demands. They seek independence from parents who have been managing their diabetes at the time that hormonal changes result in unstable diabetes control. These upheavals can be compounded by variables such as driving, drinking, and sexual issues, and, for those leaving the nest, absence of social support.

In addition to these normative changes, adolescents and young adults with diabetes must also navigate the transition from pediatric to adult health care services. Unfortunately, clinic attendance has been reported to drop during this shift, with many young people lost to follow-up at a time when they are also experiencing high rates of hypoglycemia and diabetic ketoacidosis.[1,2] Poor glycemic control, all too common in this age group, is closely associated with chronic vascular complications.[3]

For these reasons, national organizations recommend preparing young people for the transition process. Yet, a persistent need remains for clinical programs that take into account the specific needs and interests of adolescents and young adults with diabetes.[4]

According to a recent survey, college students with T1DM want communication with their health care providers to focus on personal life concerns and practical issues, such as alcohol use, sexual health, and sick-day diabetes management plans.[5] Many have also expressed a desire for continued support from family, friends, and medical providers.[5]

The recently established Diabetes Transition Program at Children's Hospital of Pittsburgh of UPMC fulfills a need for programs to equip adolescents and young adults with diabetes with confidence, knowledge, and support that can foster successful lifelong disease management. Supported by the David Paul Diabetes Transition Care Research Initiative Fund, the goals of this program are to provide the best care, and find, through research initiatives, the best ways to support and guide a successful transition for young patients and their parents. The program utilizes a multidisciplinary team approach to diabetes care involving physicians, nurse practitioners, diabetes educators, dietitians, psychologists, and consultants.

Patients attend four sessions in a one-year period, each of which includes a routine clinic appointment plus a group discussion led by diabetes educators and other health care professionals. Patients also have an opportunity to have their eyes checked for retinopathy by use of fundus photography as part of the program. Group discussions focus on issues relevant to teenagers within the context of diabetes.[6] Moderators utilize

evidence-based approaches and strategies to encourage youth to become increasingly engaged in making informed decisions about their diabetes care.[7-9] Program participants also learn to use tools such as the patient portal and resources that directly connect them to adult health care services to help prepare them and their families for a smooth transition. By meeting with the same group of peers every three months, the intent is that patients serve as their own support group.

Efforts are under way to increase the scope of services provided through the Diabetes Transition Program. These include running parallel sessions for parents so that they can learn about transition from their child's perspective and developing web-based interactive lessons to serve as adjuncts to face-to-face sessions. Telemedicine is also being explored as a way to stay connected between clinic visits with patients, especially those who often miss visits due to geography. In the future, program leaders envision enhancing the existing connection with adult care by building a T1DM medical home for adults.

This will afford young people consistent access to team care and a similar patient-centered approach to support with continued development of diabetes self-management skills.

To learn more about the Diabetes Transition Program at Children's Hospital of Pittsburgh of UPMC, please call 412-692-6862.

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Jodi Krall, PhD
Project Director, Children's Hospital of Pittsburgh of UPMC, University of Pittsburgh Diabetes Institute

Linda Siminerio, RN, PhD, CDE
Professor of Medicine, Division of Endocrinology and Metabolism
Executive Director, University of Pittsburgh Diabetes Institute

Ingrid Libman, MD, PhD
Associate Professor, Division of Pediatric Endocrinology, Department of Pediatrics, Children's Hospital of Pittsburgh of UPMC

Welcoming Transgender and Gender-Nonconforming Patients Into Your Practice

Imagine that you are establishing care with a new provider. You enter the office and go to the front desk to check in, at which point you are asked to complete an intake form. Much to your dismay and confusion, you are unable to answer one of the simplest questions on the form: "What is your gender?" Why are you unable to answer this question? Only two options are available and neither one accurately represents you. You are left with checking a box that misrepresents who you are, which makes you feel uncomfortable, and perhaps even unwelcome in this office before you even meet any medical staff. Although for most patients this would be an absurd scenario, for patients who are transgender or gender nonconforming, this is an unfortunate but commonplace occurrence. We endeavor to make this injustice a thing of the past.

The National Center for Transgender Equality's most recent U.S. Transgender Survey, an anonymous online survey of more than 27,000 transgender adults, paints a grim picture of the discrimination and harassment that these individuals face. According to this survey, in the last year, 46% of individuals reported being verbally harassed and 9% were physically assaulted simply for identifying as transgender or gender nonconforming. Many of those who responded to this survey also reported a lack of support, frank rejection, and even physical violence from family members, religious or spiritual organizations, and/or loved ones. Transgender and gender-nonconforming individuals face much higher rates of unemployment, employment discrimination, poverty, and homelessness.

As a result of this pervasive and widespread discrimination, the psychological well-being of many transgender and gender-nonconforming individuals has been negatively impacted. Indeed, 39% reported serious psychological distress in the last year, which is nearly five times that of the general population. Roughly 40% of individuals who responded to the survey reported at least one suicide attempt in their lifetime, and 7% reported attempting suicide in the last year. This is nearly 12 times the rate seen in the general population.

We believe it is our responsibility and the responsibility of all care providers to ensure a welcoming environment to transgender and gender-nonconforming individuals given their vulnerable standing in the community at large. Unfortunately, these individuals experience discrimination, even in health care settings. Many in the U.S. Transgender Survey reported being denied care, having a negative experience, or avoiding care due to fear of discrimination. The good news is that data from the National LGBT Health Education Center indicate that those transgender and gender-nonconforming individuals who do not experience discrimination are much less likely to avoid health care.

It is, of course, vital for clinicians to educate themselves about the unique medical and psychological needs of transgender and gender-nonconforming patients so that they can address gender dysphoria and provide gender-affirming care. A knowledge of local LGBTQ-friendly resources (endocrinologists, psychologists, surgeons, speech therapists, support groups, etc.) is important as well. However, there are simple steps that all health care providers can take to make their office a friendlier place for patients who are transgender or gender nonconforming.

First, it is important for physicians and all staff to have a familiarity with commonly used terms related to gender. Many confuse "sex," which refers to biological sex or sex assigned at birth, with "gender," which refers to society's perception of a person's sex.

"Gender identity" refers to a person's internal sense of their own gender, and "gender role" or "gender expression" refers to how a person chooses to express their gender outwardly. A "cisgender" individual is a person whose gender identity is congruent with their biological sex, whereas a "transgender" individual is a person whose internal sense of gender is different from their biological sex. There are also other terms used in the LGBTQ community, such as "gender queer," "trans✶" (pronounced trans star), "gender nonconforming," "gender fluid," and sometimes "intersex," that are often used as umbrella terms for individuals who tend to be categorized as transgender, but whose gender identity is nonbinary.

If the terminology seems daunting at first glance, don't be alarmed. One easily implemented patient-centered practice is asking an individual's preferences about the terms they use to describe themselves and documenting these in the medical record. This simple act is an important way to show respect, establish rapport, and illustrate your understanding that transgender and gender-nonconforming patients have much to teach us. Along those lines, transgender and gender-nonconforming patients are likely to have a specific preference about which pronouns they would like you to use (he, she, they, xe, ze, etc.) and how they would like to be addressed that may be different

from their sex assigned at birth and/or legal name. If a patient's preferences are not clear prior to an encounter, it is acceptable to use gender-neutral terminology at first. Still, a circumstance may arise, for instance with insurance and/or billing, in which a patient's legal name and birth sex are necessary. If that is the case, transgender and gender-nonconforming patients should be given a polite explanation and assured that their preferences will be respected in all other instances.

Another important way that a practice can portray a more welcoming environment for transgender and gender-nonconforming patients is with signage and reading materials. Specifically, a clearly displayed nondiscrimination policy is an excellent way to show that your practitioners and staff strive to provide respectful care to all patients regardless of sex, gender, sexual orientation, race, creed, nationality, or socioeconomic status. Similarly, posters, artwork, magazines, pamphlets, and other reading material should display a diverse representation of genders, identities, races, cultures, and experiences.

In the same way that diverse and inclusive signage can help to put our transgender and gender-nonconforming patients at ease, intake forms and other official documents should incorporate language and options that achieve the same goal. The "sex" or "gender" section of forms can be expanded to be more specific in a way that is also more inclusive. For example, an intake form could have a "sex assigned at birth" section, as well as a "gender identity" section with options such as "transgender female," "transgender male," and "gender non-conforming." Similarly, the sexual orientation section of intake forms can have options that respect the diversity of identities beyond "heterosexual" and "homosexual," with options such as "bisexual," "pansexual," "asexual," and "queer." It is, of course, important to recognize that much of this terminology is dynamic in that meanings can change over time, but also that much of it is personal in that meanings can be different for different individuals. As such, regardless of how inclusive an office's forms may be, nothing can or should replace an open and empathetic dialogue with a health care provider.

The staff and health care providers in our clinic welcome all patients. We reinforce the principles discussed herein by promptly training new staff members and continually updating training for established members of our care team. We have the empathy, knowledge, and expertise to provide gender-affirming care for transgender and gender-nonconforming patients, and we strive to make our office environment a safe and friendly space for everyone.

Ronald Codario, MD
Division of Endocrinology,
VA Pittsburgh Healthcare System
Clinical Assistant Professor,
Division of Endocrinology and Metabolism,
University of Pittsburgh

Vijay K. Yechoor, MD, Joins the Division

It is our pleasure to announce the appointment of **Vijay K. Yechoor, MD**, as director of the Diabetes and Beta Cell Biology Center in the Department of Medicine's Division of Endocrinology and Metabolism. Dr. Yechoor comes to us from Baylor College of Medicine, where he served as an associate professor of medicine.

Dr. Yechoor received his medical doctorate from the All India Institute of Medical Sciences in New Delhi, India. He trained in internal medicine during his internship and residency at Michael Reese Medical Center/University of Illinois in Chicago, Illinois, and at Baylor College of Medicine in Houston, Texas, respectively. Subsequently, Dr. Yechoor completed a fellowship in endocrinology, diabetes, and metabolism at Harvard Medical School's Longwood Fellows Program (Brigham and Women's Hospital, Beth Israel Deaconess Medical Center, and the Joslin Diabetes Center). Following completion of his medical training, he pursued additional research training in metabolism and molecular medicine at the Joslin Diabetes Center in Boston, Massachusetts, and Baylor College of Medicine, where he became a faculty member in 2004.

Dr. Yechoor's research program focuses on developing therapies that target beta cell mass and function in the pathogenesis of diabetes.

He has a long record of external funding from the National Institutes of Health, the Veterans Administration, and the American Diabetes Association. His currently funded projects include 1) the role of the circadian clock in beta cell stress adaptation, and 2) the role of Tead1-A in the transcriptional regulation of quiescence and proliferation of beta cells. More recently, he has extended his research into adipose tissue and cardiac muscle biology.

In addition to his research contributions, Dr. Yechoor is an outstanding clinician and educator. He has more than 25 years of clinical experience treating patients in the fields of general internal medicine, endocrinology, diabetes, and metabolism. He has provided clinical and research mentorship to trainees at all levels and has taught didactic courses related to endocrinology, metabolism, translational biology, and molecular medicine. His national reputation in the field is exemplified by his numerous international speaking engagements and service on national and international grant review panels.

We are very excited to have Dr. Yechoor lead our Diabetes and Beta Cell Biology Center, a key component of the University of Pittsburgh Diabetes Institute.

Please join us in welcoming Dr. Yechoor to the University of Pittsburgh.

Awards and Accomplishments

The 2017 American Association of Diabetes Educators Lifetime Achievement Award was bestowed upon **Linda Siminerio, RN, PhD, CDE** (below, left).

Sann Yu Mon, MD, received an award for outstanding contributions to the Internal Medicine Residency Program at UPMC McKeesport (below, center).

Frederico G.S. Toledo, MD, received the 2017 Fred DeRubertis Golden Apple Teaching Award (below, right).

Welcoming New Faculty Members

The UPMC Division of Endocrinology and Metabolism is pleased to welcome the following new research faculty:

Ruya Liu, MD, PhD, Instructor of Medicine (below, far left). Dr. Liu received her MD, PhD from Shanghai Jiaotong University School of Medicine in Shanghai, China, and then became faculty at Baylor School of Medicine before joining the Division of Endocrinology at the University of Pittsburgh on July 1, 2017. Her research interests focus on transcriptional control of cardiomyocyte function.

Krystle Frahm, PhD, Instructor in Medicine (below, center left). Dr. Frahm received her PhD from Colorado State University, and her T32-funded postdoctoral training in the Department of Pharmacology at the University of Pittsburgh before being promoted to Instructor in the Division of Endocrinology on September 1, 2017. Her NIH-funded research focuses on sex-specific differences in central glucocorticoid action and neuroendocrine function, especially during development.

Jeong Lee, PhD, Assistant Professor of Medicine (below, center right). Dr. Lee received her PhD from the University of Tokyo, Japan, and then became faculty at Baylor School of Medicine before joining the Division of Endocrinology at the University of Pittsburgh on July 1, 2017. Her research focuses on circadian control of beta cell function.

The UPMC Division of Endocrinology and Metabolism is pleased to welcome the following new clinical faculty:

Karen Selk, DO, Clinical Assistant Professor of Medicine (below, far right). Dr. Selk received her DO degree from Lincoln Memorial University-DeBusk College of Osteopathic Medicine. She then completed her residency in internal medicine and fellowship in endocrinology at UPMC before joining the faculty on September 1, 2017.




At the ADA

The UPMC Division of Endocrinology and Metabolism was well represented at the 2017 American Diabetes Association Scientific Sessions in San Diego, California. Faculty and research staff presented research findings, served as invited speakers and symposia chairs, and displayed their posters during the five day event. UPMC and the Division of Endocrinology and Metabolism hosted the inaugural UPMC Annual Alumni and Friends Reception at the Marriott Marquis, where colleagues and invited guests had the opportunity to mingle and network. The division looks forward to hosting this reception as an annual event. University of Pittsburgh faculty **Erin Kershaw**, **Thomas Songer**, and **Ingrid Libman** (not pictured) hosted the reception and also served on the 2017 ADA Scientific Sessions Planning Committee.

Thomas J. Songer, MPH, PhD, assistant professor, Department of Epidemiology, and Erin E. Kershaw, MD, chief, Division of Endocrinology and Metabolism.

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200 Lothrop St.
Pittsburgh, PA 15213-2582

DIVISION OF ENDOCRINOLOGY AND METABOLISM

Clinical Treatment Areas:

- Diabetes
- Obesity
- Osteoporosis
- Pituitary, Adrenal, and Reproductive Hormonal Disorders
- Thyroid Disorders

Research Areas of Focus:

- Arterial Smooth Muscle in Health and Disease
- Insulin Resistance
- Obesity
- Pancreatic Beta Cell Function
- Thyroid Cancer Molecular Diagnosis
- Type 1 and Type 2 Diabetes
- Community-based and Primary Care Programs
- Self-management and Lifestyle Interventions

A Resource for You: UPMC Physician Resources brings world-class physicians and free educational opportunities to your computer. Learn new information while watching CME-accredited videos in the convenience of your home or office. Find out more at **UPMCPhysicianResources.com/Endocrinology**.

To learn more about the UPMC Department of Endocrinology, please visit **UPMCPhysicianResources.com/Endocrinology**.

UPMC PHYSICIAN RESOURCES

ADDRESS CORRESPONDENCE TO:
Division of Endocrinology and Metabolism
200 Lothrop St.
W1055 BST
Pittsburgh, PA 15213
Phone: 412-648-9770

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