DIABETES CANADA/CSEM

PROFESSIONAL CONFERENCE

November 26 – 29, 2025

CSEM Resident Clinical Vignettes and Research Projects Booklet

CSEM
The Canadian Society of Endocrinology and Metabolism

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La Société canadienne d'endocrinologie et de métabolisme

CSEM Resident Clinical Vignettes and Research Projects

Resident Poster Presentations

Research Hour | Exhibit Hall

Thursday, November 27, 2025 at 09:15 – 10:15
Thursday, November 27, 2025 at 17:00 – 18:30
Friday, November 28, 2025 at 09:15 – 10:15

Resident Oral Presentations

Metro Toronto Convention Centre – North Building | Room 205

Thursday, November 27, 2025 at 14:30 – 15:45

Agenda

2025 CSEM Resident Clinical Vignettes and Research Projects Oral Abstract Presentations

THURSDAY, NOVEMBER 27, 2025, 14:30 PM – 15:45 PM ET

- **WELCOME AND OPENING REMARKS**
  Chair: Tayyab Khan, MD, FRCPC

- **PRESENTATIONS**

14:35 – 14:42 **A Case of Diabetic Ketoacidosis Due to Immunotherapy-induced Diabetes Mellitus**
Taylor Sidhu, MD*

14:44 – 14:51 **Familial Chylomicronemia Syndrome Causing Recurrent Pancreatitis: A Case Report**
Laura Senior, MD*

14:53 – 15:00 **Identification of a Germline ROCK2 Likely Pathogenic Variant in a Rare Case of Adult Pheochromocytoma Following Infantile Adrenal Neuroblastoma**
Florence Perrault, MD*

15:02 – 15:09 **Thyroid Hormone Resistance Related to Thrα Mutation: Diagnostic Challenges in a Pediatric Case**
Agathe Rio, MD

15:11 – 15:18 **Unmasking Autoimmune Insulin Syndrome: A Rare Cause of Recurrent Hypoglycemia**
Gabriela Szuman, MD

15:20 – 15:27 **Comparison of Postpartum Follow-Up Methods for Gestational Diabetes Mellitus**
Sandrine Leblanc-Savignac, MD*

15:29 – 15:36 **Machine Learning-Derived Diabetes Clusters and Risk of Diabetes Complications: A Systematic Review and Meta-analysis**
Armin Farahvash, MD*

* Award Eligibility

- **CLOSING REMARKS**

Abstracts

ORAL PRESENTATIONS

POSTER PRESENTATIONS

POSTER PRESENTATIONS

POSTER PRESENTATIONS

POSTER PRESENTATIONS

A Case of Diabetic Ketoacidosis Due to Immunotherapy-induced Diabetes Mellitus

Taylor Sidhu*, Breay W. Paty

University of British Columbia

Background: Immunotherapy-induced diabetes mellitus is a rare endocrine adverse event associated with immune checkpoint inhibitor medications. We describe a case of immunotherapy-induced diabetes secondary to pembrolizumab, a programmed cell death receptor-1 inhibitor.

Case: A 78-year-old woman with metastatic endometrial cancer treated with pembrolizumab for the previous nine months presented with a one-week history of nausea, anorexia, and polydipsia. She was found to be in diabetic ketoacidosis with a venous blood pH of 7.14, random glucose of 32.0 mmol/L, beta-hydroxybutyrate of 9.78 mmol/L, and hemoglobin A1C of 8.5%. She had no personal or family history of diabetes, and her last hemoglobin A1C was 5.9% two years prior. She was treated with IV insulin and then transitioned to a basal-bolus insulin regimen. She had evidence of endogenous insulin deficiency, with a C-peptide of 66 pmol/L (325-1090 pmol/L) with fasting glucose of 12.3 mmol/L. After discussion with her oncologist, the patient was restarted on pembrolizumab since it had been effective at halting the progression of her cancer, and her immunotherapy-induced diabetes was an irreversible adverse event.

Discussion: As the use of immunotherapy agents increases, the incidence of immunotherapy-induced diabetes in adults is expected to rise. This case demonstrates the need for clear guidelines on glycemic monitoring while on these medications, and for patient education on the symptoms of hyperglycemia. The case also demonstrates the importance of individualized decision-making regarding the re-initiation of immunotherapy, considering the effectiveness of immunotherapy against the ongoing risk of further immune-related adverse events.

Familial Chylomicronemia Syndrome Causing Recurrent Pancreatitis: A Case Report

Laura Senior*,
Amanda Berberich

University of
Western Ontario

Background: Familial chylomicronemia syndrome (FCS) is a rare, autosomal recessive disorder characterized by reduced lipoprotein lipase activity, causing very elevated triglycerides, and high risk of recurrent pancreatitis. Patients often have minimal benefit from statins, fibrates and omega-3 fatty acids. Limiting dietary fat content remains the mainstay of treatment, but adherence is challenging. Recent trials show plozasiran, a small interfering RNA that targets apolipoprotein C-III (APOC3), significantly reduces triglyceride levels and pancreatitis risk in FCS.

Case Presentation: A 30-year-old man was referred to urgent endocrinology clinic with a serum triglyceride level >40mmol/L. He was diagnosed with hypertriglyceridemia at 6 months of age following a lipemic blood sample. No formal genetic diagnosis was made, and he was treated with fibrate until age 15. He had five admissions for pancreatitis after moving to Canada at age 20, with no cause other than elevated triglyceride levels identified. He had no other medical issues and had a normal BMI (23.3). No eruptive xanthomas were noted on exam. Given his severe elevation in triglyceride levels and early age at diagnosis, a genetic cause was strongly suspected. Genetic testing found he carried two rare pathogenic variants in the LPL gene, confirming an FCS diagnosis. Treatment with fenofibrate, ezetimibe, and icosapent ethyl was initiated, with triglycerides lowered to 17.44 mmol/L. The patient has now been approved to receive treatment with plozasiran.

Conclusion: This case illustrates a patient with FCS, who will be among the first in Canada to receive APOC3-targeted therapy.

Identification of a Germline ROCK2 Likely Pathogenic Variant in a Rare Case of Adult Pheochromocytoma Following Infantile Adrenal Neuroblastoma

Florence Perreault*, Annabelle Cohade, Gilles Corbeil, Frédéric Mercier, Philippe Campeau, Christian Cohade, Martine Tétreault, Isabelle Bourdeau

Université de Montréal

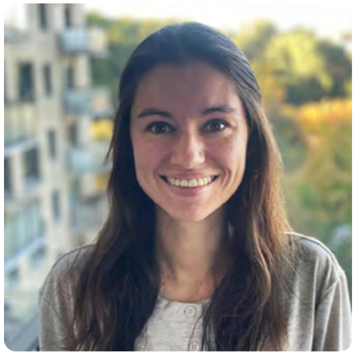
Introduction: Neuroblastoma and pheochromocytoma (PHEO) both originate from neural crest cells but have rarely been reported in the same patient.

Case Presentation: A 31 yo pregnant female presented with new episodes of palpitations, tremors and hypertension (180/90 mmHg). Past medical history included a left adrenalectomy for neuroblastoma at 7 months old, followed by chemotherapy. Hypertension peaks complicated delivery by caesarean section. A PHEO was suspected postpartum, with elevated plasma metanephrines and 24h urinary catecholamines. Adrenal CT-scan showed a 2.0 x 2.5 cm right adrenal mass with high uptake at DOTATATE-PET CT. After alpha-blockers initiation, she underwent a right adrenalectomy at 6 weeks post-partum, without complications. Pathology confirmed a PHEO.

Genetic Analysis: A germline multigene panel (PREVENTION GENETICS) revealed no susceptibility variant for PHEOs. Leucocyte and tumoral DNA exome sequencing (Genome Québec) identified a heterozygous splicing variant in ROCK2 (NM_004850.5), exon 4, c.462+1G>A (chr2:11249660), confirmed by Sanger sequencing. RT-PCR demonstrated exon 4 skipping in tumoral DNA. Because exon 4 contains a protein kinase domain, this deletion could lead to dysregulation of ROCK2. Functional studies are ongoing to better characterize the impact of this variant. Although ROCK2 has been linked to neuroblastoma, data is lacking in PHEO. We reviewed exome sequencing results from 70 PHEOs in our database and found no genetic variants in ROCK2.

Conclusion: To our knowledge, we report the first patient with a PHEO and a previous infantile neuroblastoma carrying a germline likely pathogenic ROCK2 variant. This finding may deepen understanding of genetic mechanisms involved in PHEOs development.

Thyroid Hormone Resistance Related to THRα Mutation: Diagnostic Challenges in a Pediatric Case



Agathe Rio*,
Lyne Chiniara,
Alexandra Scott,
Katherine Bonnycastle,
Catalina Maftei,
Fabien Magne

Hôpital Sainte-Justine

Thyroid hormone resistance due to nuclear receptor α (THRα) mutation is a rare entity, clearly distinct from the more common THRβ-related form. It is characterized by a specific phenotype combining impairment of motor coordination, growth retardation, dysmorphic features, constipation, and often subtle biochemical abnormalities. We report the case of a 27-month-old girl referred to genetics at 14 months for developmental delay and growth failure. Despite being born eutrophic, growth rapidly declined below the 3rd percentile, while head circumference remained preserved. Clinical history revealed gastroesophageal reflux and severe constipation. Examination showed axial hypotonia, motor developmental delay, delayed dental eruption, joint hyperlaxity, as well as dysmorphic features including upturned nose, macroglossia, bilateral ptosis and relative macrocephaly. Thyroid function tests revealed normal TSH and free T4 levels, with elevated free T3. Additional investigations demonstrated macrocytic anemia. Whole-exome trio sequencing identified a de novo heterozygous likely pathogenic frameshift variant in the last exon of THRA (c.1125_1132dup, p.Gly378Alafs*2). To our knowledge, this variant has not been previously reported. L-thyroxine therapy was initiated at 18 months, leading to significant improvement in constipation, but with no impact on growth. To date, fewer than 40 cases of THRα mutations have been reported in pediatric patients. Diagnosis remains challenging due to the highly distinctive clinical presentation, differing from other thyroid disorders, and the discordance between clinical features of hypothyroidism and near-normal thyroid function tests. This case highlights the importance of considering thyroid hormone resistance in the presence of clinical-biological discrepancy and the need for early referral to genetic testing.

Unmasking Autoimmune Insulin Syndrome: A Rare Cause of Recurrent Hypoglycemia

Gabriela Szuman*, Mireya C. Perez Guzman, Davor Brinc, Rajeevan Selvaratnam, Shereen Ezzat

University of Toronto

Introduction: Insulin Autoimmune Syndrome (IAS), or Autoimmune hypoglycemia, is a rare autoimmune condition, characterized by antibodies against insulin and spontaneous hypoglycemia. The diagnosis can be challenging leading to poor clinical outcomes.

Clinical Case: A 37-year-old, previously healthy woman, presented with acute onset episodes of symptomatic hypoglycemia (venous glucose: 2.3 mmol/L). No prior history of systemic disorders including autoimmune conditions and was not receiving any medications. Baseline blood testing showed hyperinsulinemic (insulin >2000 pmol/L) hypoglycemia (glucose 2.6 mmol/), normal liver function tests and HbA1c of 5.6%. Magnetic resonance and nuclear somatostatin receptor imaging were unremarkable. Insulin auto-antibodies (IAA), however, were highly reactive. A 75 gr oral glucose tolerance test (OGTT) elicited a hyperinsulinemic (insulin >4304 pmol/L) hypoglycemic (glucose 1.2 mmol/L) response at the 4hr (Figure 1). Positive IAA were detected with insulin recovery post PEG precipitation of < 5%, supporting the diagnosis of IAS. Treatment with prednisone 10 mg/day with restriction of simple carbohydrate diet resulted in clinical improvement within 2 weeks as well as decreases in immunoreactive insulin levels and IAA titers (Table 1). As the IAA remained positive, an OGTT was completed 20 months later (Figure 1).

Discussion: IAS should be suspected in patients presenting with hypoglycemia and inappropriate insulin secretion, increased insulin/c-peptide molar ratio >1, particularly with a history of autoimmune disorders, and/or with sulfa drug ingestion. First line treatment is stopping the putative IAS-related medication and maintaining a diet that avoids simple carbohydrates. For those with refractory severe hypoglycemia, alfa glucosidase inhibitors and glucocorticoids can be effective.

Comparison of Postpartum Follow-up Methods for Gestational Diabetes Mellitus

Sandrine Leblanc-Savignac*, Victoria Di Quinzio, Aliza Cohen, Meriem Belkacem, Marie-Ève Michaud, Djamal Berbiche, Catherine Adam

Université de Montréal

Background: Postpartum screening for prediabetes and diabetes in women with prior gestational diabetes mellitus (GDM) is recommended by all clinical guidelines. However, adherence to follow-up remains suboptimal.

Objectives: This study compares the diagnostic accuracy and adherence rates of the 75 g oral glucose tolerance test (OGTT) versus fasting plasma glucose (FPG) with HbA1c in postpartum women with prior GDM, assesses the impact of an email reminder on follow-up compliance, and examines factors associated with postpartum dysglycemia and non-adherence.

Methods: In this retrospective cohort study, approved by the institutional ethics board, 537 women who delivered at our center between February 2021 and April 2024 were included. Demographic, clinical, and biochemical data were extracted from medical records. We analyzed associations between maternal characteristics, adherence to postpartum screening, and glucose intolerance as identified by both screening methods.

Results: Among participants who underwent postpartum testing, 93% completed the OGTT, 87% completed the FPG with HbA1c, and 80% completed both tests. The OGTT group revealed 22% with prediabetes and 4% with diabetes, while FPG plus HbA1c identified only 3.5% with prediabetes and 0.7% with diabetes, confirming OGTT as a more sensitive tool for detecting postpartum dysglycemia. Ongoing analysis aims to determine adherence rates and factors associated with non-compliance and to compare the results with two previously studied cohorts from the same center (2016 and 2020).

Conclusion: OGTT remains the most effective method for detecting postpartum dysglycemia. Strategies to improve adherence, including electronic reminders, may enhance long-term metabolic outcomes.

Machine Learning-derived Diabetes Clusters and Risk of Diabetes Complications: A Systematic Review and Meta-analysis

**Armin Farahvash*,
Evan Sawula,
Michelle Lee,
Azadeh Mofid**

Northern Ontario
School of Medicine

Background: In 2018, a seminal study by Ahlqvist et al. identified five distinct diabetes clusters using machine learning (ML). Since then, multiple groups have validated these clusters and reported different rates of diabetes-related outcomes in each cluster. This systematic review aims to describe all studies reporting diabetes-related outcomes in the Ahlqvist clusters.

Methods: We conducted a systematic review of OVID Medline, EMBASE, and Cochrane Library from inception to June 2025. Studies using ML algorithms to classify patients with diabetes into Ahlqvist clusters and reporting on diabetes-related clinical outcomes were included. Population demographics, diabetes-related variables, and clinical outcomes were recorded.

Results: Of 1,386 studies, 26 met inclusion criteria, comprising 54,307 patients. Mean age was 61.4 years and 46.8% were female. De novo k-means clustering was done by 17 studies (65.4%), followed by a nearest centroid approach based on an Ahlqvist cohort (19.2%). Clustering revealed 7.4% with severe autoimmune diabetes (SAID), 19.9% severe insulin deficient diabetes (SIDD), 16.5% with severe insulin resistant diabetes (SIRD), 27.2% with mild obesity-related diabetes (MOD), and 32.8% with mild age-related diabetes (MARD). The SIRD cluster was most strongly associated with nephropathy and macrovascular complications (20 and 9 studies; 76.9% and 34.6%, respectively) while SIDD patients were at highest risk for retinopathy (11 studies, 42.3%).

Conclusion: The Ahlqvist clustering framework has been widely replicated in the literature. Our review revealed associations between specific clusters with known complications of diabetes. These findings highlight the potential of ML-based clustering to identify new subgroups of diabetes and personalize diabetes management.

Amenorrhea as a Presentation of Cushing's Syndrome

Aishah Alhajeri*, Khalid Aljenaee, Sulaiman Hajji

University of British Columbia

VIEW POSTER

Menstrual cycle abnormalities are common in premenopausal females with Cushing's syndrome, although the underlying mechanism is poorly understood. Signs and symptoms found in Cushing's syndrome overlap with polycystic ovarian syndrome (PCOS). The patient is a 33-year-old female previously diagnosed by a gynecologist with PCOS and treated with oral contraceptive pills (OCPs) for 2 years. She then discontinued her OCPs without consulting a clinician, resulting in amenorrhea for 6 months, for which she presented. She also had symptoms of depression and anxiety but had no other signs and symptoms of Cushing's syndrome, except a plethoric face. Initial lab work showed evidence of central hypogonadism (low luteinizing hormone, follicle-stimulating hormone, and estrogen), so a complete anterior pituitary hormone workup was done. Her thyroid-stimulating hormone was also low with a low free T4 level. Prolactin level was normal, but surprisingly, her AM cortisol level was high. The Cushing's syndrome workup revealed non-suppressed cortisol after a 1 mg dexamethasone suppression test and positive 24-h urine cortisol with suppressed adrenocorticotrophic hormone. A CT scan of her adrenal glands revealed a left adrenal adenoma. She underwent a left adrenalectomy, after which her menstrual cycles became regular again, and pituitary function has recovered.

A Rare Case of a Thyroid Nodule Consistent with Chronic Lymphocytic Leukemia

Danielle Cutler*, Henri Sasseville, Laurel Walfish, Sarit Assouline, Michael Tamilia

McGill University

VIEW POSTER

Background: Chronic Lymphocytic Leukemia (CLL) is a B-cell malignancy that arises from acquired mutations in hematopoietic stem cells, leading to lymphocytic leukocytosis. Primary thyroid lymphomas are uncommon, comprising ~2% of thyroid malignancies, and typically arise in the setting of Hashimoto's thyroiditis. Most are diffuse large B-cell lymphomas. CLL manifesting in the thyroid is extremely rare, with few documented cases.

Case Presentation: A previously healthy 46-year-old man was evaluated by hematology for incidental lymphocytosis in 2014. He had no B symptoms, lymphadenopathy, or splenomegaly. Flow cytometry revealed CLL (WBC 393.7 × 10^9/L), with hypermutated IgVh and wild-type TP53. He was classified as Rai stage 0 and followed without treatment. In 2023, he developed splenomegaly (19.6 cm) and an enlarged inguinal lymph node (1.2 x 0.8 x 1.5 cm) but was otherwise asymptomatic. In 2024, a routine CT scan revealed a multinodular goitre. Thyroid function was normal (TSH 2.71 mU/L). Ultrasound showed a solid, hypoechoic right thyroid nodule (16 × 25 × 37 mm) with one calcification, categorized as TIRADS 4. Fine-needle aspiration cytology demonstrated small, monotonous lymphoid cells (Bethesda V), suspicious for CLL. Hematology was reconsulted. The patient remains stable and is being co-followed by endocrinology.

Conclusion: This is a rare example of CLL presenting as a thyroid nodule, long after diagnosis and without symptomatic progression. There were no signs of thyroiditis or typical lymphoma features. This emphasizes the need to consider hematologic malignancy in the differential diagnosis of thyroid nodules, particularly in patients known for CLL.

Euglycemic Diabetic Ketoacidosis Triggered by Inpatient SGLT2 Inhibitor Use in a Patient with Post-Myocardial Infarction Pericarditis

Jae Yun Lee*,
Arshia Beigi, Ehud Ur

University of
British Columbia

VIEW POSTER

Background: Diabetic ketoacidosis (DKA) is a serious metabolic emergency characterized by ketosis and acidosis caused by an imbalance in insulin and counter-regulatory hormones. With rising use of SGLT2 inhibitors, there is increasing incidence of patients presenting in DKA with normal serum glucose levels, termed euglycemic DKA (euDKA).

Case: A 74-year-old male with untreated obstructive sleep apnea and newly diagnosed type 2 diabetes was transferred from a rural emergency department with chest pain and presumed missed STEMI, later confirmed on coronary angiography. He was diagnosed with post-MI pericarditis and started on guideline-directed therapy, including dapagliflozin on day 3 of admission given clinical stability and normal oral intake. Forty-eight hours later, routine labs revealed an elevated anion gap (17), beta-hydroxybutyrate (3.76 mmol/L), and serum bicarbonate (19 mmol/L) without hyperglycemia. The patient remained asymptomatic. Alternative causes of anion gap metabolic acidosis were unlikely given hemodynamic stability and no signs of sepsis; therefore, he was diagnosed with euDKA. Dapagliflozin was discontinued, and due to the ward's resource constraints and the mild nature of the acidosis, subcutaneous insulin was used instead of IV insulin, resulting in prompt metabolic normalization within six hours. He was discharged days later in stable condition.

Discussion: This is the first reported case of post-MI pericarditis precipitating euDKA, and among the first in stable inpatients newly started on SGLT2 inhibitors. With broader inpatient use of these agents, this case highlights the importance of early recognition and suggests that mild euDKA may be safely treated with subcutaneous insulin in selected stable patients.

Pituitary Tumour with SDHB Mutation

Anabel Cardenas Rivas*, Toru Tateno

University of Alberta

VIEW POSTER

Succinate dehydrogenase (SDH) gene mutations are associated with a predisposition for development of hereditary pheochromocytomas and paragangliomas (PPGLs). The association between SDHB mutations and pituitary tumours is not well established, and their optimal management remains unclear. A 55-year-old female presented for assessment of a parasellar lesion and hyperprolactinemia in the context of a known SDHB mutation (c.72+1G>T). The patient's blood pressure had been well controlled with telmisartan 20 mg once daily in community. Urine and plasma metanephrines had been measured several times in the past and normetanephrines had been mildly elevated to a maximum of 5.7 umol/d (< 4.3 umol/d). A Ga-68-DOTATE scan and FDG PET/CT showed an intensely FDG avid lesion centered along the left cavernous sinus with low DOTATE uptake (Krenning's score 1-2). An MRI sella showed a left parasellar mass (3.1x2.4x2.2 cm) with left cavernous invasion and no optic chiasm compression. Her pituitary panel revealed an elevated prolactin at 486 ug/L with suppressed LH and FSH. An MIBG scan showed no uptake at the site of the mass. Given a high suspicion of prolactinoma, bromocriptine 1.25 mg once daily was started. Her prolactin decreased by 60% within 7 weeks. After a switch to cabergoline due to side effects, her prolactin normalized. At present, her prolactin level remains normal on cabergoline 0.25 mg twice weekly. This case highlights a rare instance of an SDHB-associated prolactinoma that was responsive to dopamine agonist therapy. Genetic testing should be considered in patients with isolated pituitary tumours and a family history of PPGLs.

A Case of Suspected Tafamidis-Associated Thyrotoxicosis in a Patient with Cardiac Amyloidosis due to Transthyretin Protein

Lauren Winsor*,
Sandra Cooke-Hubley,
Stephen Duffett

University of
British Columbia

VIEW POSTER

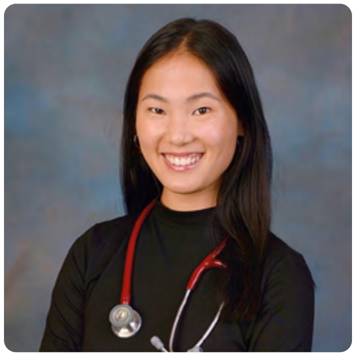
Introduction: Transthyretin transports thyroxine, binding 10% of circulating T4. Tafamidis treats transthyretin-associated amyloidosis (ATTR) by inhibiting transthyretin misfolding, and binds transthyretin with higher affinity than T4. Following tafamidis initiation, transthyretin levels increase, potentially affecting free T4 levels, although there have been no cases of tafamidis-associated thyroid disease reported.

Case: A 69-year-old male with ATTR cardiac amyloidosis and previously normal thyroid function developed thyrotoxicosis 6 months after starting tafamidis. The patient was overtly hyperthyroid for 8 weeks and was unresponsive to methimazole. However, there was a dramatic improvement after starting prednisone, which quickly normalized the thyroid function tests. The diagnostic work-up for the hyperthyroidism ruled out autoimmune thyroiditis, Graves' disease, functioning thyroid nodules, and medication or iatrogenic iodine load. There was no history of recent viral illness. The thyroid scan and update was negative with a < 2% uptake. As a diagnosis of exclusion, tafamidis-associated thyrotoxicosis was considered, given the known interaction between tafamidis and transthyretin. After a 6-month course of high-dose prednisone with taper, the patient's thyroid function has normalized, and his symptoms have resolved. He has not developed hypothyroidism to date.

Discussion: The diagnosis in this case was thought to be thyrotoxicosis secondary to tafamidis use. This may have been due to a drug-induced autoimmune reaction to tafamidis, with the effects of tafamidis on transthyretin and thus on circulating free T4 compounding this presentation.

Conclusion: Patients taking tafamidis should be monitored for thyroid disease, given the potential effect on transthyretin.

A Case of Insulin Edema Syndrome Improved by Weekly Insulin



Noémie Desgagnés*, Loredana Talos, Melissa-Rosina Pasqua, Vanessa Tardio

McGill University

VIEW POSTER

Background: Insulin edema is a rare complication of insulin therapy, typically occurring during treatment initiation or intensification. We describe a case of latent autoimmune diabetes in adults (LADA) with insulin edema syndrome improved by insulin icodec, and we reviewed the literature for similar cases.

Case Presentation: A 55-year-old woman with a longstanding diagnosis of type 2 diabetes (hemoglobin A1c 11.8% [4.3-6.0%]) and low adherence to insulin therapy due to the rapid onset of peripheral edema and weight gain following insulin injections was referred to our multidisciplinary endocrinology team. Secondary etiologies of edema were ruled out, and she was diagnosed with insulin edema syndrome. Various types of insulin were tried, including an automated insulin delivery, which worsened her edema and weight gain, leading to discontinuation of all insulins. She was later diagnosed with LADA. Weekly insulin icodec was introduced, which was well-tolerated by the patient and improved her adherence to therapy and her insulin edema without significant weight gain.

Discussion: Insulin icodec, a third-generation analog, prolongs action through reversible binding to serum albumin rather than forming hexamers in the subcutaneous tissue, which may explain why it led to less peripheral edema compared to previous generations. Clinical presentation typically involves bilateral leg edema, but more severe manifestations have been reported. Insulin edema is a diagnosis of exclusion, and clinicians should be aware of this clinical entity. The use of third-generation long-acting insulin analogs may be helpful in some patients with this syndrome.

Low Alkaline Phosphatase: A Key Investigation in the Workup of Secondary Osteoporosis

Gareth Leung*, Chaitanya Gandhi

University of Alberta

Alkaline phosphatase (ALP) is a routine but undervalued investigation as part of the secondary workup of osteoporosis. Our case describes the importance in evaluating the differential diagnosis for low ALP. A 60-year-old man was referred to our osteoporosis clinic with multiple fragility fractures (T6, T8, L2, and right 8th/10th rib fractures) in 2022. His bone mineral density (BMD) in 2024 showed T-score at L-spine -4.2, femoral neck -2.8, and total hip -2.3. His fracture risk assessment tool (FRAX) score was very high (major osteoporotic fracture 15% and hip 5%). He had been on risedronate since 2022. Retrospective review of previous investigations revealed low/low normal ALP present since 2006 and a right adrenal lipid-poor adenoma measuring 3.5x2.5 cm. Other relevant history included hypertension requiring three agents, dyslipidemia, and prediabetes. The constellation of findings was concerning for adrenal Cushing's syndrome. Further work-up showed 24-hour urine free cortisol 453 nmol/d, random cortisol 511 nmol/L with ACTH < 0.5 pmol/L and DHEAS 0.3 μmol/L, and midnight salivary cortisol 23.5 nmol/L. His 1-mg dexamethasone suppression test revealed cortisol 585 nmol/L. He underwent right adrenalectomy with pathology confirming an adrenocortical adenoma. He was started on glucocorticoid replacement perioperatively and remains on this with monitoring of hypothalamic-pituitary-adrenal axis recovery. From an osteoporosis standpoint, he was started on teriparatide with subsequent improvement in BMD (T-score at L-spine -2.7, femoral neck -2.6, and hip -2.4) and normalization of ALP. Our case demonstrates the importance of evaluating Cushing's syndrome as a potential cause for low ALP in the secondary work-up of osteoporosis.

VIEW POSTER

Case Report: A Rare Case of Ollier's Disease with Coexistence Brainstem Glioma and Pituitary Macroadenoma

Raghad Mallesho*, Joshua Lakoff

Queen's University

VIEW POSTER

Background: Ollier's disease is a rare, non-hereditary skeletal dysplasia characterized by multiple enchondromas, often affecting one side of the body. It is associated with somatic mutations in IDH1 or IDH2 and carries an increased risk of malignant transformation, particularly to chondrosarcoma. CNS tumors are exceedingly rare in Ollier's disease. We present a unique case involving both a brainstem glioma and a pituitary macroadenoma.

Case Presentation: A 32-year-old woman with Ollier's disease, depression, and migraines treated with topiramate presented with acute tonsillitis and altered mental status. Head CT revealed two incidental lesions: a brainstem mass and a sellar/suprasellar lesion. MRI confirmed a diffuse midline glioma and a pituitary macroadenoma compressing the optic chiasm. Visual fields were intact. Physical exam showed central obesity and a dorsocervical fat pad without other signs of Cushing's syndrome. Endocrine workup showed elevated urinary cortisol, normal ACTH, and inadequate suppression after a 1 mg dexamethasone suppression test (DST). Repeat testing post-illness normalized except for persistent DST failure, possibly related to topiramate use. Biopsy of the brainstem lesion confirmed a WHO Grade 2 astrocytoma with an IDH1 R132C mutation. The patient underwent chemoradiation. She later developed polyuria and polydipsia; a water deprivation test excluded diabetes insipidus.

Conclusion: This case highlights a rare tumor combination in Ollier's disease, with concurrent brainstem glioma and pituitary macroadenoma. It also emphasizes the diagnostic challenges posed by medication-related endocrine test interference and underscores the importance of recognizing atypical tumor associations in Ollier's disease.

A Case Series of Young Women with Homozygous Familial Hypercholesterolemia Treated with Evinacumab

Isabel Shamsudeen*, Amanda Berberich

University of Western Ontario

VIEW POSTER

Introduction: Homozygous familial hypercholesterolemia (HoFH) is a rare condition characterized by elevated levels of low-density lipoprotein cholesterol (LDL-C) usually due to variants in the LDL receptor gene. Standard lipid-lowering therapies are only modestly effective at lowering LDL-C. Treatment of HoFH in women of child-bearing age is particularly challenging given limited safe therapeutic options in pregnancy. Evinacumab is a monoclonal antibody against angiopoietin-like protein 3 that lowers LDL-C levels via a novel receptor-independent mechanism. Its safety has not been evaluated in pregnancy. We present here two young women with HoFH treated with evinacumab.

Case Presentation: Case A is a 39-year-old woman with HoFH who has been on evinacumab for 6 months, in addition to a statin, ezetimibe and plasmapheresis. Her time-averaged LDL-C has decreased by 59.1% from 8.76 to 3.58 mmol/L on evinacumab, despite a reduction in frequency of apheresis. Case B is a 33-year-old woman with HoFH and known ASCVD with prior coronary artery bypass graft who has been on evinacumab for 18 months, in addition to a statin, ezetimibe, colesevalam and plasmapheresis. Her time-averaged LDL-C reduced by 32.0% from 7.94 to 5.40 mmol/L, though her apheresis frequency also increased over this time. No adverse events have been reported for either patient.

Conclusion: Two young female patients with HoFH have shown marked improvement in LDL-C levels with a mean reduction of 59.1% and 32.0% on evinacumab, respectively, on top of existing therapy. Overall, observations from our case series suggest that evinacumab is an effective treatment for young women with HoFH.

Thyroid Eye Disease After External Beam Radiation Treatment for Nasopharyngeal Carcinoma

Zoe O'Neill*,
Marshall Dahl

University of Ottawa

VIEW POSTER

Background: Radiation therapy (XRT) to the neck or upper mediastinum is a well-recognized cause of late thyroid dysfunction. While hypothyroidism is most common, evidence has linked XRT to Graves' disease (GD) and, more rarely, thyroid eye disease (TED). This phenomenon is typically delayed, with cases reported years after radiation in patients without prior thyroid disease.

Case: A 51-year-old woman with a history of T1N1 nasopharyngeal carcinoma treated with a 50-day course of external beam irradiation presented two years later with new-onset periorbital swelling. She denied visual changes or systemic thyrotoxic symptoms. Examination revealed mild proptosis and periorbital edema. Laboratory evaluation showed elevated TSH receptor and anti-thyroid peroxidase antibodies, suppressed TSH, and normal free T4/T3. Orbital imaging demonstrated extraocular muscle enlargement without optic nerve involvement, consistent with active TED. There was no evidence of malignancy recurrence. She was treated with low dose methimazole and managed conservatively by ophthalmology. Over five months, her thyroid function stabilized, ultimately evolving to subclinical hypothyroidism.

Discussion: This case highlights XRT as a rare but important trigger for GD and TED, particularly in head and neck cancer survivors. The pathogenesis likely involves radiation-induced thyroid injury triggering autoimmune activation in genetically susceptible individuals. TED may occur with or without concurrent hyperthyroidism and can follow an unpredictable course. Careful thyroid and ophthalmic surveillance are warranted for all patients exposed to neck or mediastinal XRT. Early recognition and multidisciplinary management are key to preventing long-term morbidity.

Prolonged Acute Phase Response to First Zoledronic Acid Infusion in a Young Male with Idiopathic Osteoporosis

Zoe O'Neill*, Brandon Galm

University of Ottawa

VIEW POSTER

Introduction: Zoledronic acid (ZA) is a potent bisphosphonate for osteoporosis, valued for its once yearly administration. Its most common adverse effect is an acute phase response (APR), a self-limiting flu-like syndrome typically resolving within 72 hours. Severe and prolonged APRs are rare, particularly in young, otherwise healthy adults.

Case Presentation: We present the case of a 36-year-old male with idiopathic osteoporosis and a history of hereditary elliptocytosis who received his first 5 mg ZA infusion. Within 24 hours, he developed a classic APR with fever, myalgias, and severe bone pain. While initial associated nausea subsided, the fever and debilitating pain persisted for 28 days, prompting an extensive workup for a fever of unknown origin. Investigations revealed a transiently elevated C-reactive protein (21 mg/L) and mild anemia. However, comprehensive infectious and autoimmune evaluations were unremarkable. All symptoms eventually resolved spontaneously.

Conclusion: This case illustrates an atypically severe and prolonged APR, which may have been potentiated by ZA-induced oxidative stress in the context of the patient's underlying red cell membrane disorder. It highlights the importance of considering an exaggerated APR in the differential diagnosis of prolonged fever post-ZA infusion, even in younger patients. This awareness can prevent extensive, costly, and unnecessary investigations for alternative etiologies. Clinicians should counsel high-risk, bisphosphonate-naïve patients about the possibility of a prolonged course and consider prophylactic strategies, such as a multi-day course of dexamethasone, to mitigate symptom severity and improve the patient experience.

Atypical Parathyroid Adenoma Initially Misclassified as a Thyroid Lesion: A Diagnostic Challenge Complicated by Refractory Hungry Bone Syndrome

Tiffany Mach*, Line Vautour

McGill University

VIEW POSTER

Primary hyperparathyroidism is commonly caused by adenomas; parathyroid carcinomas account for < 1% of cases. Severe primary hyperparathyroidism increases the risk of hungry bone syndrome, especially with Vitamin D deficiency and renal impairment, requiring prolonged calcium supplementation. A 40-year-old female with hypothyroidism presented with four weeks of poor oral intake, nausea, and constipation. On examination, she had a 3 cm palpable mass in her right thyroid. Laboratory workup revealed a total calcium 4.23 mmol/L, PTH 119.3 pmol/L, 25-OH Vitamin D < 15 nmol/L and creatinine 171 umol/L. She was treated with intravenous bisphosphonates and Vitamin D supplementation. Neck ultrasound showed a right TIRADS4 thyroid nodule and fine needle aspiration revealed benign focal papillary hyperplasia with hypercellular parathyroid tissue. Additional imaging demonstrated renal stones, nephrocalcinosis and diffuse skeletal sclerosis, consistent with longstanding hyperparathyroidism. She underwent a parathyroidectomy, and pathology confirmed an atypical parathyroid neoplasm (4.6 cm by 3 cm by 3 cm). Postoperatively, she developed refractory hungry bone syndrome with ionized calcium persistently < 1.1 mmol/L for over 10 days. She required intravenous calcium gluconate, high dose oral calcium and escalating doses of calcitriol with eventual stabilization on oral therapy alone. This case highlights an atypical parathyroid adenoma, concerning for carcinoma, which was initially mischaracterized as a thyroid lesion, illustrating the diagnostic overlap. It emphasizes the importance of anticipating hungry bone syndrome in patients with severe hyperparathyroidism, particularly with skeletal resistance, Vitamin D deficiency and prior bisphosphonate use. Early recognition and aggressive calcium supplementation are essential in preventing complications of hypocalcemia.

A Case of Corneal Nerve Prominence Resulting in a Diagnosis of MEN 2B

**Maria Flynn*,
Julie Mckeen,
Kirstie Lithgow**

University of Calgary

VIEW POSTER

Background: MEN2B is an autosomal dominant condition, due to a germline mutation in the RET gene and characterized by medullary thyroid cancer (MTC), pheochromocytoma, marfanoid habitus and mucosal and intestinal ganglioneuromas. Corneal nerve prominence, visualized on slit-lamp examination, is a rare clinical finding of MEN2B. Due to the increased mortality rate and potential de novo nature of this condition, this ocular finding may aid in earlier detection and clinically important screening and interventions.

Case: A healthy 23-year-old female presented for consultation for laser eye surgery. On examination, she was noted to have evidence of corneal nerve prominence. Referral to Endocrinology was pursued to evaluate for potential underlying endocrinopathy explaining this clinical finding. On examination, she had a marfanoid body habitus and mucosal neuromas. Genetic testing was pursued and was significant for a heterozygous RET p.M918T mutation, determined to be de novo in nature. Following genetic diagnosis, further screening evaluation demonstrated clinical and radiologic evidence of thyroid nodules and lymphadenopathy with elevated calcitonin (544ng/L), concerning for MTC. Additionally, serum metanephrines were elevated and MIBG scan demonstrated an intensely avid adrenal nodule, consistent with a pheochromocytoma. She underwent a total thyroidectomy with central and lateral neck dissection, and unilateral adrenalectomy. Pathology revealed T1bN1b, stage IVa, MTC and moderately-differentiated pheochromocytoma.

Conclusion: Incidental detection of corneal nerve prominence resulted in genetic diagnosis of MEN2B in a 23-year-old female who was subsequently found to have metastatic medullary thyroid carcinoma and pheochromocytoma. This astute clinical exam finding resulted in expedited diagnosis and management of this patient.

Breaking the Lipid Barrier: Management Considerations in an Adult with Homozygous LPL Deficiency

Eden Meisels*,
Ari Morgenthau,
Cynthia T. Luk

University of Toronto

VIEW POSTER

Background: Lipoprotein lipase (LPL) deficiency is a rare autosomal recessive disorder causing familial chylomicronemia syndrome (FCS) due to impaired triglyceride hydrolysis. This disorder typically manifests in childhood or early adulthood with recurrent abdominal pain, hepatosplenomegaly, and eruptive xanthomas, with pancreatitis as an associated complication. As conventional lipid-lowering agents are largely ineffective, strict dietary fat restriction remains the mainstay of management. Novel therapies are promising and may become more widely available in the near future. This case highlights the diagnosis and multimodal management considerations in an adult diagnosed with LPL deficiency.

Case Presentation: A 50-year-old female was referred to endocrinology for severe hypertriglyceridemia refractory to conventional treatment and with a history of pancreatitis five years prior. Despite rosuvastatin, fenofibrate, ezetimibe, icosapent ethyl, and intensive nutrition therapy, triglycerides remained elevated at 23.14 mmol/L. Her low body mass index of 18 and family history of dyslipidemia prompted genetics assessment. While awaiting results, she experienced recurrent pancreatitis treated in hospital. Genetic testing revealed homozygous pathogenic variants in the LPL gene (c.602A>T, p.Asp201Val). Individualized dietary management including medium-chain triglyceride oil to balance fat restriction with adequate nutrition was necessary. Access to olezarsen, an antisense oligonucleotide inhibiting apolipoprotein C-III, was approved and the patient awaits treatment initiation.

Discussion: This case describes an unusually delayed presentation of LPL deficiency. Considering the ineffectiveness of conventional pharmacotherapy in FCS and unique treatment considerations, recognition of this disorder and individualized and multidisciplinary management are essential. This is particularly important as genetic testing and novel therapies become more widely accessible.

Treating HyPOGlycemia: Use of Personalized Onco-Genomics in Guiding Insulinoma Management

Huaying (Helen) Zhao*, Joseph Leung

University of British Columbia

VIEW POSTER

Background: Insulinomas are rare neuroendocrine tumours with approximately 90% occurring sporadically. The molecular mechanisms underlying neoplastic transformation are not well elucidated. We report a case of insulinoma, in which personalized onco-genomics (POG) identified a PREX2 mutation, potentially informing therapeutic planning.

Case: A 49-year-old previously healthy man presented to the emergency department with 3-year history of episodic confusion, blurred vision, and paraesthesia. Outpatient fasting glucose was 2.8 mmol/L. A critical sample from a supervised 72-hour fast confirmed endogenous hyperinsulinism with symptomatic hypoglycaemia. Imaging demonstrated a 5.5cm pancreatic head lesion consistent with neuroendocrine tumour, and a 1cm hepatic lesion suspicious for metastasis. He underwent pylorus-preserving pancreaticoduodenectomy with intraoperative ablation of the liver lesion. Postoperatively, hypoglycemia resolved. Pathology confirmed a pT3pN0 grade 2 pancreatic neuroendocrine tumour (Ki-67 3%). The liver lesion ultimately identified as hemangioma. Due to initial concern of metastatic disease, he enrolled in POG. Genomic profiling identified PREX2 mutation, which may support therapeutic use of mTOR inhibitor. Additional hereditary cancer testing revealed a variant of undetermined significance in the POLD1 gene.

Discussion: This case illustrates the utility of POG in characterizing the underlying genetic alterations of the individual's insulinoma. PREX2 mutations have been associated in activation of PI3K/AkT signalling pathway in melanoma models, leading to subsequent downstream mTOR activation, which is involved in regulation of cell growth, metabolism, and survival. Thus, mTOR inhibitors may offer therapeutic benefit in insulinomas driven by similar molecular alterations. Comprehensive tumour genomic profiling may inform personalized treatment strategies in rare tumours such as insulinoma.

Why Am I So Hairy? Adolescent Hirsutism: Beyond a Diagnosis of PCOS

Gabrielle Scantlebury*, Carolina Silva, Trisha Patel

BC Children's Hospital

Objective: To describe a case of adolescent hirsutism and the importance of considering rare enzymatic defects during evaluation.

Background: Polycystic ovarian syndrome (PCOS) is a common cause of hyperandrogenism in females. It remains a diagnosis of exclusion. Alternative etiologies must be considered particularly when clinical features are atypical.

Case: An 11-year-old girl presented with hirsutism. She experienced pubarche at age 6 and menarche at age 9. Menses were initially irregular but normalized. By age 11, she acquired excessive facial and body hair, shaving twice weekly. Family history was notable for hirsutism but no PCOS or congenital adrenal hyperplasia (CAH). Examination showed BMI 26.3 kg/m^2 (+2.26 SD), Tanner stage 5 pubic hair, facial hirsutism, and acne, without clitoromegaly. Investigations revealed persistently elevated DHEAS and androstenedione, low sex hormone-binding globulin, and high bioavailable testosterone. ACTH stimulation, dexamethasone suppression, and MRI excluded common causes of CAH, Cushing's syndrome, and adrenal/ovarian tumors. A provisional diagnosis of PCOS was made and lifestyle changes initiated. However, hirsutism worsened. Persistently elevated DHEAS (Table 1) led to further testing, revealing raised stimulated 17-OH-pregnenolone, suggestive of non-classic 3-beta-hydroxysteroid dehydrogenase type 2 deficiency (HSD3B2).

Discussion: HSD3B2 deficiency is a rare disorder affecting adrenal and ovarian steroidogenesis. Severe forms result in adrenal insufficiency and differences of sexual development. Non-classic presentations are subject of debate, as cases may reflect heterozygous carriers or assay limitations. This case emphasizes the need to broaden the differential diagnosis beyond PCOS in adolescent girls with hirsutism. Genetic confirmation is essential for definitive diagnosis, counselling, and reproductive planning.

Refractory IGF-2–Mediated Hypoglycemia in Unresectable Metastatic Lung Adenocarcinoma

Hernan Franco Lopez, Natasha Maher*

University of Western Ontario

VIEW POSTER

Background: Non-islet-cell tumour hypoglycemia (NICTH) is a rare but serious paraneoplastic syndrome caused by tumoral overproduction of insulin-like growth factor 2 (IGF-2) or its high-molecular-weight form (“big IGF-2”), which exerts insulin-like activity via insulin receptors. Surgical resection is typically curative, but hypoglycemia management from unresectable tumours remains challenging.

Clinical Case: A 77-year-old man with metastatic lung adenocarcinoma refractory to initial chemoradiotherapy, now on a clinical trial drug ORIC-114, was admitted after a severe hypoglycemic episode (capillary blood glucose 1.0 mmol/L). Endocrinology was consulted due to recurrent overnight hypoglycemia (serum glucose < 1.8 mmol/L). Whole body CT imaging showed progression of his metastatic disease. A critical blood sample showed: serum glucose 1.1mmol/L (4-10), β-hydroxybutyrate < 0.1 mmol/L (< 0.3), insulin level < 3 pmol/L (18-135), C-peptide 136 pmol/L (370-1470), Growth Hormone 0.5 ug/L (< 2.5), IGF-1 35 ug/L (21-204) and IGF-2 334 ng/ml (267-616), IGF2:IGF1 ratio of 9.5 (< 3). He was started on dexamethasone (up-titrated to 4mg PO BID), octreotide (50 mg IV daily) with intermittent hypoglycemic episodes requiring IV dextrose. He was then started on somatotropin (0.2 mg daily) but was still having hypoglycemic episodes (BG 1.8-2.4 mmol/L). He shortly after deteriorated with respiratory failure and was transitioned to palliative care. He passed away within 48 hours.

Discussion: NICTH should be recognized as an insulin-independent cause of refractory hypoglycemia. An elevated IGF2:IGF1 ratio > 3:1 is suggestive of NICTH. For unresectable disease, management of hypoglycemia is challenging and often includes a combination of glucocorticoids, octreotide, and recombinant Growth Hormone.

Graves' Disease vs. Thyroiditis: A Challenging Case of Thyrotoxicosis After Autologous Stem Cell Transplant

Akshay Varghese*, Amanda Berberich

University of Western Ontario

VIEW POSTER

Background: In thyrotoxicosis, the key diagnostic dilemma is often distinguishing Graves' disease from thyroiditis, as management differs substantially. Diagnosis becomes more challenging when imaging is delayed or results are discordant.

Case: A 28-year-old male with relapsing-remitting multiple sclerosis, status post autologous stem cell transplant (May 2024), presented with headache, nausea, and antecedent neck pain. He was tachycardic, and thyroid function tests (TFTs) revealed severe thyrotoxicosis (TSH 0.02mIU/L, FT4 >99pmol/L, FT3 42.3pmol/L). He was treated with atenolol and propylthiouracil, later transitioned to methimazole. On follow-up, FT4 and FT3 improved rapidly; thyroid receptor antibodies were negative. A thyroid uptake scan was deferred due to his iodine-containing multivitamin. Within two weeks, he developed hypothyroidism (TSH 7.03mIU/L, FT4 7pmol/L), leading to discontinuation of methimazole. A delayed uptake scan showed elevated uptake (43%), suggestive of Graves' disease, yet concurrent TFTs demonstrated marked hypothyroidism (TSH 66.48mIU/L). He remained mildly hypothyroid for two months before gradually returning to euthyroidism, consistent with thyroiditis.

Discussion: This case highlights the complexity of differentiating Graves' disease from thyroiditis, particularly when clinical course and diagnostic imaging diverge. Prior stem cell transplant added further uncertainty, as transplant-related thyrotoxicosis, though rare, is possible. The patient's rapid transition from thyrotoxicosis to hypothyroidism ultimately favored thyroiditis despite scan findings. Learning Points Graves' disease and thyroiditis are the main considerations in new thyrotoxicosis but can be difficult to distinguish initially. Uptake scans must be interpreted in the context of contemporaneous TFTs. When imaging is unavailable, clues such as FT3:FT4 ratio and thyroid ultrasound may be helpful.

Ectopic ACTH Syndrome Presenting as Refractory Hypokalemia in Metastatic Castration-Resistant Prostate Cancer with Neuroendocrine Transformation

Armin Farahvash*, Minghan Shi, Prashant Jani, Joseph Del Paggio

Northern Ontario School of Medicine

VIEW POSTER

Introduction: Ectopic ACTH syndrome (EAS) is a rare paraneoplastic disorder characterized by ACTH secretion from non-pituitary tumors. While most commonly found in small cell lung carcinoma, it can rarely present in prostate cancer with neuroendocrine transformation.

Case: A 65-year-old man with a 2-year history of metastatic castration-resistant prostate cancer presented with refractory hypokalemia. His metastatic disease was previously treated with radiation, androgen deprivation therapy, and chemotherapy. A year after treatment, histologic examination of a pathologic femoral fracture demonstrated neuroendocrine transformation of his metastatic disease. He also developed mild hypokalemia, managed with supplemental potassium, and remained asymptomatic. He presented to the emergency department with hypertension and severe hypokalemia of 2.0 mmol/L. Investigations revealed a 24-hour urinary cortisol of 6423 nmol/day, ACTH of 50 pmol/L, and seated aldosterone of 100 pmol/L. Low-dose dexamethasone suppression test was negative. Contrast-enhanced CT scan showed normal bilateral adrenal glands, and brain MRI did not show any pituitary abnormalities. There was extensive metastatic disease in the liver and bones. The findings supported diagnosis of EAS secondary to neuroendocrine transformation. Unfortunately, the patient's severe hypokalemia persisted despite supplementation and he passed away before commencing treatment.

Conclusion: While other reports in the literature demonstrate a survival of weeks to months in patients with EAS from prostate cancer with chemotherapy and ketoconazole treatment, our patient had an extensive burden of malignancy and deteriorated within days before initiation of treatment. This case highlights the prognostic importance of early recognition of EAS in patients with metastatic disease and neuroendocrine transformation.

Gestational Transient Thyrotoxicosis Leading to Thyroid Storm

Taylor Sidhu*, Shivraj Riar

University of British Columbia

Background: Gestational transient thyrotoxicosis (GTT) is a self-limiting condition requiring minimal medical intervention. We present a case of GTT resulting in thyroid storm.

Case: A 36-year-old G2P1 woman, with no prior medical history, presented at 8-weeks gestation with recurrent vomiting and intermittent palpitations. She had severe hypokalemia with a transaminitis and subsequently developed atrial fibrillation, hypotension, and pulmonary edema, with echocardiogram showing an ejection fraction of 44% with global hypokinesis. The TSH was < 0.03 mIU/L, FT4 >74 pmol/L (12-22 pmol/L) and FT3 12.0 pmol/L (5.5-6.5 pmol/L). The HCG was 181,142 IU/L, high normal for gestational age, and ultrasound confirmed a single intrauterine gestation. The TRAb was negative, with a normal thyroid ultrasound. She was treated for thyroid storm with propylthiouracil, one week of dexamethasone, and two doses of Lugol's iodine. Propylthiouracil was discontinued in early second-trimester after normalization of FT4. She did not require further therapy, with sustained normal FT4. She delivered via caesarean section at 38 weeks with no maternal or fetal complications. At 12-months post-partum, she had sustained euthyroid status with no therapy and repeat negative TRAb, confirming GTT.

Discussion: This is the first reported Canadian case of GTT resulting in thyroid storm. There are only two cases in the literature of GTT causing thyroid storm in a singleton pregnancy, as most reported cases of thyroid storm are due to autoimmune hyperthyroidism. Given the high mortality, this case illustrates the importance of early recognition and management of thyroid storm in pregnancy resulting in improved outcomes.

VIEW POSTER

Integrating U-500 Insulin in Automated Insulin Delivery Pumps: A Case Demonstrating this Novel Approach for Type 2 Diabetes Management

Peter Squire*,
Anna Rogers,
Robin Lucciantonio

University of Alberta

VIEW POSTER

Concentrated insulin, like U-500 Entuzity, is increasingly used in patients with Type 2 Diabetes and severe insulin resistance to enhance glycemic control, reduce injection volumes, and improve cost-effectiveness. While typically administered via multiple daily injections (MDI), studies have explored Automated Insulin Delivery (AID) systems for easier use and better glycemic outcomes. We report a case of a 49-year-old with Type 2 Diabetes using U-500 Entuzity insulin via an AID pump (Tandem T:slim). Despite intensive MDI therapy with U-500 insulin (100 units daily, equivalent to 500 units of U-100) and oral therapies including a GLP-1 agonist, HbA1c (10.5%) and time in range (TIR< 10%) were not close to CDA recommended targets. After starting the AID pump with U-500 insulin, the patient's TIR improved to over 80% within 24 hours and remained stable for two weeks with pump adjustments to minimize hypoglycemia risk. However, the total daily dose (TDD) decreased, nearing the pump's lower settings and risking insulin wastage. They were consequently transitioned to U-200 Humalog insulin, maintaining TIR at 80-90%, with an estimated GMI of 5.9%, a coefficient of variation of 22%, and a 60% reduction in TDD (approximately 21 units of U-200, equivalent to 42 units of U-100). They achieved a 10-pound weight loss and medication burden was reduced. This case highlights the potential of combining concentrated insulin with AID systems to optimize insulin delivery and reduce insulin resistance in patients with high insulin needs, ultimately enhancing patient-reported quality of life and confidence in diabetes management.

Beta-HCG induced Hyperthyroidism in Context of Non-seminoma Metastatic Germ Cell Carcinoma

Sajad Niyyati*,
Jason Kong

University of
British Columbia

This case is regarding a 27-year-old male with a new diagnosis of non-seminoma metastatic germ cell carcinoma who presented with hyperthyroidism associated with elevated β-human chorionic gonadotropin (1,079,969 IU/L). He was initially treated with an anti-thyroid medication, methimazole. In follow-up, after four cycles of chemotherapy the patient became euthyroid and his B-HCG concentration significantly decreased. The anti-thyroid medication was subsequently discontinued. We hypothesized that his hyperthyroidism was induced by stimulation of the thyroid gland by significantly elevated beta-hcg levels, which was markedly improved after chemotherapy.

Clots and Calculi: Underrecognized Complications of Cushing Syndrome

Natasha Maher*,
Alexander Sorisky

University of Ottawa

VIEW POSTER

Background: Cushing syndrome (CS) is associated with complications beyond its classical features. A hypercoagulable state increases the risk of venous thromboembolism (VTE), while altered calcium metabolism predisposes to nephrolithiasis. We present a case of CS complicated by pulmonary embolism and nephrolithiasis, highlighting these underrecognized manifestations.

Clinical Case: A 46-year-old woman presented with weakness, hypertension (170s/100s), and hypokalemia. Past medical history included hypertension, fibromuscular dysplasia, and spontaneous coronary artery dissection. Investigations revealed Cushing syndrome: 24-h urinary cortisol 6,250 nmol/day (0-157), AM cortisol 775 nmol/L after 1 mg dexamethasone (130-540), ACTH 36.4 pmol/L (1.6-13.9) and repeat 24 hr urinary cortisol 1,550 nmol/day (0-157). A partial suppression of AM cortisol to 316 after 8 mg dexamethasone (130-540), and a MRI showing a 9 mm pituitary microadenoma pointed to Cushing disease. She was readmitted with bilateral segmental/subsegmental pulmonary emboli and started on anticoagulation, which delayed neurosurgery. Ketoconazole was initiated. She was readmitted again with nephrolithiasis requiring laser lithotripsy and JJ stent placement. Upon anticoagulation completion, she underwent transsphenoidal resection. Pathology confirmed a corticotroph adenoma.

Discussion: Mechanisms linking hypercortisolism to hypercoagulability remain incompletely understood, but imbalances in pro- and anticoagulant pathways, elevated fibrinogen, von Willebrand factor, factor VIII, and impaired fibrinolysis are implicated. Nephrolithiasis is likely multifactorial, driven by cortisol-induced hypercalciuria with contributions from hyperoxaluria, hyperuricosuria, and hypocitraturia. Obesity, hypertension, and diabetes likely further amplify risk. Clinicians should remain vigilant to VTE and nephrolithiasis as underrecognized but serious complications of Cushing syndrome.

When a STEMI Isn't a STEMI: A Case of Pheochromocytoma Crisis

Natasha Maher*,
Heidi Dutton,
Derek So,
Brock Wilson

University of Ottawa

VIEW POSTER

Background: Pheochromocytoma crisis is the acute severe presentation of catecholamine-induced hemodynamic instability, causing end-organ dysfunction. This life-threatening endocrine emergency carries high mortality, yet published management guidance remains limited.

Case: A 43-year-old man presented to the ED with chest pain diagnosed as a STEMI. Urgent coronary angiography revealed no culprit coronary stenosis. Left ventriculogram/POCUS showed moderately reduced left ventricular (LV) function. He developed severe BP fluctuations (systolic BP 40–200mmHg) during the angiogram. Abdominal CT with contrast, to rule out aortic dissection, revealed a right adrenal mass (7.1 cm), suspicious for pheochromocytoma. Shortly after, he was intubated for hypertensive emergency and flash pulmonary edema. Hemodynamics remained extremely labile. He suffered a PEA arrest progressing to shockable rhythm, requiring two defibrillations. Post arrest, TEE revealed reduced LVEF of 5-10% and decision was made to place on venoarterial extracorporeal membrane oxygenation (VA-ECMO). IV phentolamine was initiated for alpha blockade. He also required nitroprusside, vasopressin, milrinone, and fluid resuscitation. Oral prazosin was initiated via NG tube. Urine metanephrines were 131.9 μmol/day and normetanephrines 28.1 μmol/day. After 7 days of VA-ECMO, he was decannulated. Repeat echocardiogram showed EF >55%. He improved clinically, was weaned off pressors, and started on bisoprolol after adequate alpha blockade. Outpatient adrenalectomy is planned.

Discussion: This case highlights the complex management of pheochromocytoma crisis, particularly with labile BP, as well as the potential role of IV contrast in precipitating hypertensive emergency in patients with pheochromocytoma. Alpha blockade, fluid resuscitation, sodium nitroprusside, early use of VA-ECMO, and vasopressors/inotropes can aid stabilization.

Reverse-Takotsubo Cardiomyopathy: A Rare Diagnosis from an Even Rarer Cause

Yaanu Jeyakumar*, Alexander Kumachev

University of Toronto

VIEW POSTER

A 66-year-old female with type 2 diabetes and hypothyroidism presented to the emergency department with a productive cough. Two days prior, she started taking nasal decongestant spray and amoxicillin. On presentation, she appeared diaphoretic and unwell. She had sinus tachycardia (150 BPM) and crackles on auscultation of her left lung field. She received ceftriaxone and 3L of isotonic fluids. A CT Chest showed opacities suggestive of pneumonia. An incidental abdominal mass was partially visualized. A subsequent abdominal CT showed a left retroperitoneal mass with cystic and solid features, possibly adrenal in origin. That evening, she received 25 mg of metoprolol for non-resolving sinus tachycardia. Several hours later, she developed hypertension and respiratory distress. Repeat bloodwork showed troponin elevation of 10,160 (normal 0–16 ng/L). An echocardiogram revealed a hyperdynamic apex with global akinesis concerning for reverse-Takotsubo cardiomyopathy.

She subsequently became hypotensive and was transferred to the ICU in cardiogenic shock, requiring veno-arterial extracorporeal membrane oxygenation. Investigation of her adrenal mass showed elevated plasma metanephrines 221.13 (normal 0–0.50nmol/L) and 24-hour urine metanephrines 4,053 (normal 0–170nmol/d). Following stabilization, her hypertension was treated with doxazosin, followed by metoprolol. Her mass was surgically removed, and pathology confirmed pheochromocytoma. Pheochromocytoma is a tumour arising from the adrenal medulla, leading to uncontrolled catecholamine secretion. Our case highlights a rare presentation of cardiomyopathy in a patient with pheochromocytoma crisis, without preceding typical symptoms of pheochromocytoma. Precipitants of clinical deterioration included pseudoephedrine exposure and beta-blockade prior to adequate alpha-blockade, which led to unopposed alpha-adrenergic stimulation and hemodynamic collapse.

Rare Presentation of Unilateral Graves' Disease Involving a Bilobar Thyroid Gland

Emily Davies*,
Arshia Beigi,
David Thompson

University of
British Columbia

VIEW POSTER

Background: Graves' disease is an autoimmune disorder typically characterized by diffuse bilateral thyroid involvement. Unilateral Graves' disease is a rare and poorly understood manifestation.

Case: A 36-year-old male presented to the emergency department with 1-day history of tachycardia and no prior history of thyroid or autoimmune disease. Laboratory evaluation revealed suppressed TSH with elevated thyroxine and triiodothyronine levels. On examination, the thyroid was non-tender, normal in size, and without any palpable nodules. No thyroid eye disease was present. Pertechnetate thyroid scintigraphy demonstrated diffuse uptake confined to the left lobe with minimal uptake in the right lobe. Iodine-123 thyroid uptake and scan was performed to evaluate for hyperfunctioning nodules, demonstrating elevated 24-hour radioiodine uptake (41%) and confirming homogenous left lobe activity, absence of hot or cold nodules, and suppression of the right lobe. Bilateral thyroid lobes appeared morphologically normal and symmetrical in size. TSH receptor antibodies were positive, confirming the diagnosis of unilateral Graves' disease. The patient was treated with methimazole with clinical improvement and normalization of thyroid function after four months.

Conclusion: Unilateral involvement of Graves' disease in a morphologically normal bilobar thyroid is an exceedingly uncommon presentation of a common disease. Unlike previously reported cases of unilateral Graves' disease which often describe enlargement of the affected lobe, this case is unique in demonstrating no significant thyromegaly on examination or imaging. This highlights that the absence of goiter should not preclude the diagnosis and underscores the importance of considering unilateral Graves' disease in patients with thyrotoxicosis and asymmetric scintigraphic uptake.

One Gene, Two Phenotypes: Contrasting Presentations of Adult-Onset Hypophosphatasia in Identical Twins

Youstina Soliman*, Adrian Lau

University of Toronto

VIEW POSTER

Background: Hypophosphatasia (HPP) is a rare inherited metabolic disorder of bone and mineral metabolism caused by tissue-nonspecific alkaline phosphatase (ALP) deficiency. Clinical manifestations range from premature tooth loss and musculoskeletal abnormalities to multisystem complications. Despite identical genetics, hypophosphatasia can manifest with strikingly different clinical phenotypes. We present two cases of adult-onset HPP in identical twin sisters with the same ALPL mutation but with distinct clinical presentations.

Case Presentations: A 58-year-old woman presented with osteopenia. She had a history of polyarthralgia, congenital hip dysplasia, renal calcifications, and shoulder calcium deposition. She denied fractures or dental disease. Workup demonstrated low ALP (31 U/L; ref 35–120 U/L), normal calcium and phosphate, and elevated vitamin B6 (90 µg/L; ref 3.4–65.2 µg/L). Her identical twin sister, also 58, presented with osteoporosis, childhood wrist fracture, polyarthralgia, periodontal disease with early tooth loss, and nephrolithiasis. Investigations revealed low ALP (25 U/L) and elevated vitamin B6 (108 µg/L). Family history included paternal recurrent calcium deposits. Genetic testing confirmed a heterozygous ALPL mutation (c.599G>T, p.Gly200Val), consistent with HPP. Both sisters initiated enzyme replacement therapy with asfotase alfa (6 mg/kg/week). Following treatment, ALP rose markedly (>4,800 U/L) with significant clinical improvement in joint pain and normalization of vitamin B6.

Conclusion: These cases illustrate the phenotypic variability of HPP, even among genetically identical twins. Clinicians should maintain a high index of suspicion for HPP in adults with persistently low ALP, unexplained bone pain, or premature dental loss. Early diagnosis and targeted therapy can substantially improve outcomes and quality of life.

When a Hot Nodule Looks Malignant: Management of a TI-RADS 5, Bethesda III Thyroid Lesion in an Adolescent Female

Abdulrahman Habib*, Angeliki Makri

McGill University

VIEW POSTER

Background: Pediatric thyroid nodules are uncommon but carry a higher malignancy risk than in adults. Hyperfunctioning ("hot") nodules are usually benign; however, discordant findings on imaging and cytology can complicate management.

Case Presentation: A 15-year-old female presented with a painless right neck swelling of two months' duration. She reported occasional palpitations but no other symptoms of thyroid dysfunction. Examination revealed a soft, mobile right thyroid mass without lymphadenopathy. Laboratory studies showed suppressed TSH with elevated T3 and T4, negative thyroid autoantibodies, and otherwise unremarkable hormonal work-up. Ultrasound demonstrated a 2.2 × 3.3 × 4.2 cm mixed cystic–solid isoechoic nodule with punctate echogenic foci, consistent with TI-RADS 5. Scintigraphy revealed a hypermetabolic right-lobe nodule suppressing background thyroid uptake. FNAC was reported as Bethesda III (atypia of undetermined significance). Given the combination of suspicious ultrasound features and indeterminate cytology, surgical management was pursued despite the nodule's autonomous function. A right hemithyroidectomy was performed. Final histopathology demonstrated a benign follicular nodule with oncocytic (Hürthle cell) metaplasia and cystic degeneration.

Conclusion: This case illustrates the diagnostic challenge posed by discordant preoperative findings in pediatric thyroid nodules. While hot nodules are typically benign, malignant potential cannot be excluded when TI-RADS 5 features or indeterminate cytology are present. Definitive histology remains essential, and careful integration of imaging, cytology, and functional data is required to guide management.

Resolution of a Large Unilateral Breast Mass in a Pre-pubertal Boy Following Discontinuation of Lavender Oil Exposure: A Case Report

Abdulrahman Habib*, Anne Marie Sbrocchi

McGill University

VIEW POSTER

Background: Large unilateral breast masses are rare in prepubertal boys and require thorough investigation. This case highlights the importance of considering environmental endocrine disruptors in the differential diagnosis before embarking on invasive procedures.

Case Presentation and Discussion: A 4-year-old male presented with a 3-week history of a growing, painless, left retro-areolar breast mass that was well-circumscribed and felt firm on physical examination. Ultrasound revealed a 38 x 16 x 36 mm unilocular cyst with mobile debris, without septation, solid nodules, or calcifications. Comprehensive endocrine evaluation ruled out hormonal imbalances. Detailed history from the patient's family revealed significant exposure to lavender oil for sleep promotion, known to have estrogenic and anti-androgenic properties. Management involved discontinuation of lavender oil exposure with routine follow-up. Three months later, the mass had resolved entirely without the need for surgical intervention. Informed consent was obtained for this case report.

Conclusion: This case demonstrates the critical importance of thorough history-taking before surgical management of prepubertal breast masses. Pediatric surgeons should specifically inquire about environmental endocrine disruptors, including essential oil exposure, when evaluating breast masses in children to avoid unnecessary interventions.

Gender Affirming Hormone Therapy & VTE Risk

Nicole Prince*,
Irena Druce

University of Ottawa

VIEW POSTER

Background: Patients receiving Gender Affirming Hormone Therapy (GAHT) may be at risk of developing VTE (venous thromboembolic) disease. Considerations for treatment of patients with a history of VTE will be discussed.

Case: A 20 year-old individual assigned male at birth was started on GAHT with estradiol 2 mg PO BID and spironolactone 25 mg PO BID with appropriate clinical response. Five months later, she was admitted to hospital for severe mycoplasma pneumonia requiring transfer to intensive care unit (ICU) on post-admission day 2 due to increasing oxygen demands. The patient was found to have extensive bilateral pulmonary emboli without evidence of right heart strain. Their stay was complicated by hematuria following a traumatic catheter insertion. The patient was discharged on rivaroxaban 15 mg PO BID for 14 days followed by 20 mg PO daily. Estrogen was held until reassessment by GAHT provider.

The patient was re-admitted 1 day later for hemorrhagic shock from the urethra requiring brief vasopressor support and continuous bladder irrigation. An inferior vena cava filter was placed during this hospitalization. The patient was discharged on apixaban 5 mg PO BID for 3 months and estrogen was held for 1 month.

After 3 months she was placed on apixaban 2.5 mg PO BID for secondary prevention.

She was switched to subcutaneous estradiol valerate 4 mg weekly for GAHT.

Discussion: Multiple factors contribute to the development of VTE in the context of GAHT. Guidelines regarding management of VTE in the context of GAHT, and ongoing GATH in a patient with a history of VTE will be reviewed.

Pulsatile Tinnitus as Presenting Symptom of a Catecholamine Secreting Glomus Jugulare Tumour

Monica Boctor*,
Stan Van Uum

University of
Western Ontario

Background: Glomus jugulare tumours are rare, highly vascular tumours arising from neuroendocrine cells of the jugular bulb, located below the floor of the middle ear. Less than 5% of head and neck paragangliomas are found to be secretory.

Case: A 26 year old previously healthy male was assessed by otolaryngology for pulsatile tinnitus. Left tympanic membrane inspection revealed a bulging lesion. CT head showed a large left jugular foramen mass with local vascular invasion and destruction of the bony margin of the jugular foramen. The mass was intensely DOTA-TATE avid and no other lesions were found. His 24 hour urine testing showed significant elevations in norepinephrine at 14602 (66-660) nmol/day and normetanephrine at 63.2 (< 2.8) umol/day. He had no clinical symptoms of catecholamine excess. Because of the location and extent of local invasion with high risk of cranial nerve deficits following surgery, the patient was referred for primary fractionated radiation therapy. Prior to radiation, he was initiated on alpha blockade with doxazosin to prevent catecholamine crisis. Genetic testing is pending.

Discussion: This case highlights the complex work up and management of secretory glomus jugulare tumours. Although head and neck paragangliomas are not generally secretory, biochemical screening is still necessary. Radiation therapy is a reasonable treatment when risk for surgical complications is high. Although there is lack of evidence addressing the need to start alpha blockade prior to radiation for secretory glomus jugulare tumours, this should be considered to reduce risk of catecholamine crisis.

VIEW POSTER

Hiding in Plain Sight: Intrathyroidal Parathyroid Carcinoma

Nada El Tobgy*, Samantha Wolfe, Moosa Khalil, Sana Ghaznavi

University of Calgary

Parathyroid carcinoma is a rare endocrine malignancy, accounting for 0.5%–2% of primary hyperparathyroidism cases. Intra-thyroidal presentation is exceedingly uncommon, with fewer than 20 reported cases. We report a 38-year-old woman with a 2.9 cm TR5 hypoechoic, lobulated thyroid nodule on neck ultrasound. It had been present for 12 years and was increasingly symptomatic. Fine needle aspiration (FNA) cytology suggested follicular neoplasm (FN). At urgent care, she reported 5 months of fatigue, aches, and malaise. Investigations revealed severe hypercalcemia (serum calcium 3.55, normal 2.10-2.60 mmol/L) and markedly elevated PTH (606, normal 15- 57 ng/L), atypical for parathyroid adenomas and concerning for carcinoma. Further workup demonstrated bilateral nephrocalcinosis and elevated 24-hour urinary calcium excretion, consistent with primary hyperparathyroidism. She was treated with cinacalcet pending surgery. Sestamibi scan localized a left upper thyroid pole, corresponding to the FN nodule. She underwent left thyroid lobectomy. Intraoperative frozen sections revealed a widely invasive intrathyroidal parathyroid carcinoma. Permanent histopathology showed lymphatic and perineural invasion, positive radial margins (T2N0Mx), Ki-67 index 15.4%, and loss of parafibromin staining. Central neck lymph nodes were negative for malignancy. Given her young age and malignant diagnosis, genetic testing for MEN syndromes and hyperparathyroidism-jaw tumor syndrome has been requested. Surveillance includes serial serum calcium, PTH, and neck ultrasound. This case illustrates that intrathyroidal parathyroid neoplasms can mimic primary thyroid tumors and may be difficult to distinguish from follicular neoplasms on FNA. It underscores the importance of correlating biochemical findings with imaging in patients with concurrent hyperparathyroidism and thyroid nodules.

VIEW POSTER

An Uncommon Case of Postpartum Pheochromocytoma Crisis Complicated by Hypoxic Cardiac Arrest Requiring Veno-Arterial-Venous Extracorporeal Membrane Oxygenation (ECMO)

Arshia Beigi*,
Shadan Ashrafi,
Benjamin Schroeder

University of
British Columbia

VIEW POSTER

Background: Large-volume hemoptysis due to hypertensive crisis is a rare initial presentation of pheochromocytoma. We report a postpartum patient who developed severe hypoxic respiratory failure requiring ECMO.

Clinical Case: A 34-year-old woman presented on postpartum day 1 with nausea, vomiting, headache and chest tightness after an uncomplicated vaginal delivery. She had experienced milder, self-limited symptoms after her first delivery three years prior. In the ED, her systolic blood pressure exceeded 200 mmHg. A CT pulmonary angiogram, performed to assess for pulmonary embolism, incidentally revealed an 18 cm left adrenal mass, concerning for pheochromocytoma. In the ICU, she received doxazosin and IV phentolamine. Labetalol was attempted for tachycardia but caused extreme blood pressure fluctuations. She developed hemoptysis and pulmonary edema, requiring intubation. Worsening hypoxia and hypotension led to a pulseless electrical activity (PEA) arrest. After resuscitation, VV-ECMO was planned, but recurrent arrhythmia and another PEA arrest necessitated transition to V-A-V. With continued alpha- and beta-blockade and verapamil, she stabilized by day 3, allowing extubation and ECMO decannulation. Twenty-four-hour urine studies confirmed markedly elevated catecholamines and metanephrines. She was discharged on doxazosin 12mg BID and propranolol, with adrenalectomy deferred until six weeks postpartum. Laparoscopic adrenalectomy was uncomplicated, though she later developed a left renal subtotal infarction with preserved function. Postoperative urine studies normalized.

Conclusion: Severe hypoxemic respiratory failure from hemoptysis and pulmonary edema is an uncommon presentation of pheochromocytoma. This case illustrates a rare postpartum pheochromocytoma crisis in which ECMO was required for respiratory failure, rather than the more typical cardiogenic shock.

Vertebral Artery Dissection as a Rare Vascular Complication of Severe Primary Hyperaldosteronism: A Case Report

Aishah Alhajeri*,
Brandon Galm

University of
British Columbia

VIEW POSTER

Background: Primary hyperaldosteronism is a common but underdiagnosed cause of secondary hypertension. It is associated with an increased risk of cardiovascular and cerebrovascular complications. While aortic dissection secondary to hyperaldosteronism has been reported, vertebral artery dissection as a presenting manifestation has not previously been described.

Case Presentation: We report the case of a 37-year-old male admitted with a hypertensive emergency manifesting as right vertebral artery dissection, pseudoaneurysm, and posterior fossa stroke. He had a history of hypertension with mild hypokalemia diagnosed one year earlier, initially managed with ramipril, followed by the addition of amlodipine and hydrochlorothiazide. On admission, despite three medications, his blood pressure was 163/99 mmHg with persistent hypokalemia (K^+ 2.6 mmol/L) needing potassium chloride supplementation (80mEq three times daily). Laboratory investigations revealed elevated aldosterone (575 pmol/L) with suppressed renin activity (< 0.05 ng/L/s) despite ongoing antihypertensive therapy. A 24-hour urine collection confirmed elevated aldosterone (136 µg/day). Non-contrast CT demonstrated a left adrenal adenoma (10x11mm in size), and adrenal venous sampling showed lateralization to the left adrenal gland. The patient underwent left adrenalectomy, after which his blood pressure was well controlled with amlodipine monotherapy and his serum potassium normalized without potassium supplementation.

Conclusion: Primary hyperaldosteronism can present as a hypertensive emergency with life-threatening vascular complications. This case highlights the importance of screening for primary hyperaldosteronism in patients with hypertension and hypokalemia, as timely diagnosis and treatment can prevent severe complications.

Recurrent ACTH-Secreting Pancreatic Neuroendocrine Tumor Causing Severe Hypercortisolism and Complications of Cushing's Syndrome

Rachel Wine*,
Malavika Varma,
Fatmah Mallallah,
Brandon Galm

University of
British Columbia

VIEW POSTER

Background: Ectopic Cushing's syndrome is a rare cause of hypercortisolism, accounting for 5–20% of ACTH-dependent cases. It is often caused by neuroendocrine tumors (NETs) and carries significant morbidity and mortality. These tumors can be indolent but may recur with severe hypercortisolism and metastatic potential.

Clinical Case: A 71-year-old male presented with profound weakness and cardiac arrhythmias, and was found to have polymicrobial bacteremia, hepatic and portal vein thromboses, and severe refractory hypokalemia. Biochemistry revealed a markedly elevated 24 hour urine cortisol of 3981 nmol/d (normal 10–166) and ACTH of 34 pmol/L (normal < 14). He had a prior history of an ACTH-secreting pancreatic NET (PNET) treated with distal pancreatectomy in 2015. Current Gallium-68 DOTATATE PET imaging revealed recurrence with lesions in the pancreatic head, medial duodenal wall, mesenteric nodes, and osseous foci at T9 and the left acetabulum. His hypercortisolism was managed with etomidate infusion, metyrapone, and ketoconazole, given the urgency of cortisol control and multiple complications. Once stable, he underwent bilateral adrenalectomy for definitive management. For tumour directed therapy, he was started on lanreotide every 4 weeks without chemotherapy.

Discussion: This highlights a rare case of a recurrent ACTH-secreting PNET leading to severe Cushing's syndrome with life-threatening complications. Prompt recognition, multidisciplinary management, and escalation to bilateral adrenalectomy were critical in achieving hormonal control. This case illustrates the life-threatening nature of metastatic functional PNETs with severe hypercortisolism and the importance of long-term surveillance.

Neuropathic Pain Manifesting as Allodynia in a Patient on Semaglutide

Joanna Mader*,
Barna De

Dalhousie University

VIEW POSTER

Introduction: GLP-1 receptor agonists (GLP-1 RA) have become a mainstay of pharmacotherapy for type 2 diabetes (T2D). While their safety profile has been well characterized, allodynia has been uncommonly reported. We describe a case of allodynia with dose escalation of subcutaneous semaglutide.

Case: A 47-year-old man was seen by endocrinology in early 2025 for review of T2D of 8 years' duration and new-onset "paresthesias." He was on sitagliptin and semaglutide 2 mg subcutaneously weekly when he was first assessed. On semaglutide 1 mg weekly, his A1C had been 8.4% so his family doctor had increased the dose to 2 mg weekly 3 months prior to our visit, with a subsequent A1C of 8.0%. Shortly after the dose increase, he developed a diffuse "sunburn-like" sensation most notable on his limbs, lower back and neck, which was painful to light touch (for instance, from his clothing), causing distress. During the consultation, he had no rash and his 10-gram monofilament exam was normal. We suggested a trial off semaglutide. In follow-up 3 months later, he reported that his allodynia had completely resolved approximately one week after stopping semaglutide. Now, several months later, he has not had a recurrence of his symptoms, and he has not been open to a retrial of semaglutide.

Discussion: This case demonstrates that allodynia may be a possible adverse side effect of semaglutide. Allodynia and dysesthesia were not reported in landmark trials, but with the popularity of GLP-1 RAs, such rare side effects may become more commonly observed.

Accessing the Inaccessible: An Individual Living with Blindness and Type 1 Diabetes using the DIY-Loop Automated Insulin Delivery (AID) Algorithm

Evan Hagen*,
Robin Lucciantonio,
Anna Rogers

University of Alberta

Accessibility remains a critical barrier for individuals who live with low vision and type 1 diabetes, particularly with automated insulin delivery (AID) systems. Currently in Canada, all commercially available systems rely on visual interfaces. We present a case of a 52-year-old man with a 49-year history of T1D and 20 years of complete blindness, who implemented the Do-It-Yourself Loop AID algorithm using the Omnipod Dash system and iPhone accessibility features. He had been using a manual pump successfully through tactile and auditory adaptations for years, however commercially available AID systems remained inaccessible. Loop, a non-commercial AID solution, provided a viable alternative with initial app installation and teaching provided by a specialized installation clinic and his local diabetes team. The patient accessed the Loop App using iPhone VoiceOver, and created custom tools such as a stabilizing pod-filling station to navigate hardware limitations. Training with a simulator and saline trial enabled a safe transition to full insulin delivery. He was able to achieve a time-in-range (TIR) of 86%, A1c of 6.0%, coefficient-of-variability of 24.9%, and a marked decrease in diabetes-related burden. This case underscores the lack of inclusive design in technology for a disease where blindness is a known complication. It also demonstrates how existing accessibility features, when paired with open-source technology and a collaborative care model, can offer effective glycemic management for individuals who have low vision. Advocacy for inclusive design from the outset is essential to ensure equitable access to life-changing standard-of-care diabetes technologies. The patient might attend the conference.

VIEW POSTER

An Uncommon Presentation of Panhypopituitarism

Jordan C. LeSarge*, Tamara Spaic

University of Western Ontario

VIEW POSTER

We present a rare case of panhypopituitarism secondary to tuberculous meningitis (TBM). TBM causing multiple pituitary hormone deficiencies is reported in ~0.3% of all active TB cases, with few case reports describing panhypopituitarism with AVP-deficiency(1-2). A 21-year-old, previously healthy, South-Asian man, recently immigrated to Canada, presented with seizures, fever, and altered mental status. He was diagnosed with TBM and started rifampin, isoniazid, pyrazinamide, and ethambutol (RIPE). MR head showed basal meningitis extending into the suprasellar cistern without direct sellar involvement. Initial pituitary labs available included AM-cortisol (502nmol/L) and TSH (3.38mIU/L). RIPE therapy was narrowed to rifampin and isoniazid. Eight-months later, he re-presented with vision changes. MR head showed a 2.9x2.4x2.6cm sellar mass with suprasellar/parasellar extension. Ophthalmology confirmed bitemporal hemianopia and bilateral optic neuropathies. Pituitary evaluation revealed central-adrenal insufficiency (AM-cortisol: 24nmol/L, ACTH: 5.5pmol/L), central-hypothyroidism (TSH: 1.93mIU/L, FT4: 5pmol/L, FT3: 4pmol/L), central-hypogonadism (AM-testosterone: < 0.4nmol/L, LH: < 0.31IU/L, FSH: < 1IU/L), AVP-deficiency (sodium: 143mmol/L, serum-Os: 285mOsm/Kg, urine-Os: 80mOsm/Kg, copeptin: 1.7pmol/L), growth-hormone deficiency (IGF-1: 88ug/L), and stalk effect (prolactin: 70ug/L). While mycobacterial resistance and immune reconstitution inflammatory syndrome (IRIS) were considered, disease progression with sellar involvement was attributed to possible non-adherence. Ethambutol was reintroduced. Follow-up MR showed sellar mass reduction (1.7x1.5cm). He remains on levothyroxine, hydrocortisone, desmopressin, and testosterone with marked improvement. Growth-hormone replacement has not been started. This case highlights the importance of close follow up of vision and pituitary function in TBM and considering atypical etiologies of panhypopituitarism.

Challenges at The Margins: Recurrent DKA in a Young Adult with T1DM, Substance Use Disorder, and Unstable Housing

Zoe O'Neill*,
Arshia Beigi,
David J.T. Campbell,
Pol Darras

University of Ottawa

VIEW POSTER

Background: Individuals with type 1 diabetes (T1DM) and co-occurring substance use disorder (SUD) are at high risk for blood glucose lability and diabetic ketoacidosis (DKA). In many, these risks are compounded by co-occurring housing insecurity, which creates critical barriers to consistent insulin administration, optimal nutrition, and receipt of ongoing medical care.

Case: A 19-year-old woman with T1DM, SUD, psychiatric comorbidities, and housing instability was admitted for her 14th episode of DKA over 18 months. Following medical stabilization, she remained hospitalized for several months to establish a safe discharge plan. Due to the barriers she faced to self-management, a multidisciplinary team including endocrinology, addictions medicine, social work, community pharmacy, and a youth outreach team developed a "harm reduction" based diabetes care plan integrated into supportive housing placement. This plan featured shared insulin administration by nursing and community pharmacy and continuous glucose monitoring (CGM) with remote data sharing with the endocrinology team. Insulin dosing was simplified into two fixed administration times daily and supported by a written protocol for insulin management in cases of missed meals or doses. Residence staff were given direct care team contacts for assistance beyond the protocol.

Discussion: This case illustrates the complex interplay of substance use, homelessness, and psychiatric disease in driving recurrent DKA. There is a critical need for scalable, housing linked care models to prevent acute and long-term complications of diabetes. Innovative harm reduction approaches and integrated housing medical partnerships are essential to providing safe and sustainable care in this high-risk population.

False-Positive 68Ga-DOTATATE PET Findings in the Evaluation of Pheochromocytomas and Paragangliomas: A Case Series

Sandrine Leblanc-Savignac*, Christian Cohade, Harold James Olney, Frédéric Mercier, Isabelle Bourdeau

Université de Montréal

Background: ^{68}Ga-DOTATATE PET is a key imaging tool for pheochromocytomas and paragangliomas (PPGLs), but false positives, though rare, can occur—especially in non-secreting tumors.

Case 1: A 22-year-old woman with type 1 Neurofibromatosis had a 43x31mm para-aortic mass with moderate DOTATATE uptake (SUVmax 9.7). Biochemical tests were normal. Surgical pathology revealed Castleman disease, not a paraganglioma.

Case 2: A 60-year-old man had a 19x18 mm hyperdense hepatorenal nodule with intense 68Ga-DOTATATE uptake (SUVmax 15.1), suggestive of PGL. Plasma free metanephrine levels were normal. Chromogranin A was slightly elevated. Urine sampling revealed a slight increase of norepinephrine 536 nmol/d (N < 475 nmol/d) and dopamine 3200 nmol/d (N < 2300 nmol/d). Histology showed a benign hemangioma. Exome sequencing identified an EGLN2 mutation (c.C1142G, p.A381G) previously linked to PPGLs, reported here for the first time in a hemangioma.

Case 3: A 54-year-old man with prior metastatic pheochromocytoma had a 20x24 mm cheek lesion (SUVmax 7.1) on DOTATATE-PET suspicious for recurrence. Biochemical markers were normal except for elevated chromogranin A. Pathology revealed a high-grade B-cell lymphoproliferative disorder.

Conclusion: These cases highlight that intense or moderate uptake on ^{68}Ga-DOTATATE PET does not always indicate PPGL. Alternative diagnoses—including Castleman disease, hemangioma, and lymphoproliferative disorders—should be considered, particularly when biochemical results are unremarkable. A multidisciplinary approach is essential to avoid misdiagnosis.

VIEW POSTER

Novel Use of Humulin R U-500 in an Automated Insulin Delivery System Results in Stable Glycemic Control and Reduced Diabetes Burden in a Patient with T1D and Severe Insulin Resistance

Aria Jazdarehee*, Robin Lucciantonio, Jennifer Jacquier

University of Alberta

VIEW POSTER

Background: The use of concentrated insulin with continuous subcutaneous insulin infusion (CSII) and automated insulin delivery (AID) remains off-label, with few reports involving AID and no published cases from Canada.

Case: We describe a 26-year-old woman with longstanding type 1 diabetes and severe insulin resistance, requiring over 200 units of insulin/day on multiple daily injections and approximately 120 units/day of insulin lispro 200 units/mL (U-200) after transition to AID with a Tandem t:slim X2 pump. She was switched to Humulin R U-500 (U-500R) to meet her high insulin requirements.

Results: Three months following transition to U-500R, her glucose management indicator (GMI) was 7.5% (compared with 7.4% on U-200), her time in range (TIR) decreased from 60% to 55%, and time below range (TBR) increased from 1 to 2%. Her average daily insulin needs shifted from 122 units of U-200 to 54 units of U-500R, while infusion set changes decreased from every 1.8 to 4.3 days. The patient reported improved satisfaction with lower pump volume demands and extended infusion set wear.

Conclusion: The use of U-500R in an AID system provided meaningful benefits for a patient with severe insulin resistance, resulting in less frequent infusion set changes while maintaining glycemic stability. Despite theoretical risks of stacking, delayed action, and nocturnal hypoglycemia, no significant increase in TBR was observed. Further studies are needed to define optimal pump parameters, absorption kinetics, and long-term safety.

Cystic Prolactinoma – An Unusual Presentation and a Diagnostic Conundrum

Lauren Quong*,
Ali Imran

Dalhousie University

VIEW POSTER

Serum prolactin (PRL) generally correlates well with prolactinoma (PRLoma) size. However, levels up to six times the upper limit of normal with a large sellar mass may reflect stalk compression rather than a true PRLoma(1). PRLomas typically grow infrasellarly and rarely cause pituitary dysfunction beyond hypogonadism(2). We present a case of cystic PRLoma that posed a diagnostic challenge. A 17-year-old male presented with peripheral vision loss, headaches, nausea, and vomiting. MRI showed a 2.8 cm cystic suprasellar lesion, suggestive of Rathke's cleft cyst or craniopharyngioma. Initial PRL was 196 µg/L (normal: 4.04–15.2 µg/L), with biochemically confirmed complete anterior pituitary insufficiency requiring hormone replacement. Due to vision loss and imaging features, he underwent intracystic Yttrium-99 insertion, leading to cyst shrinkage to 2.0 cm at 3 months, prolactin of 152 µg/L and visual improvement. Pathology showed cyst contents with inflammation. At 6 months, PRL rose to 240 µg/L, raising suspicion for cystic prolactinoma. Cabergoline was initiated, leading to PRL reduction to 68 µg/L, and complete cyst resolution. He remains on 0.5 mg weekly cabergoline due to intolerance to a higher dose. This case highlights several unusual features of a cystic PRLoma: presenting as a suprasellar lesion with complete anterior pituitary insufficiency requiring ongoing replacement 5 years later. This case also emphasizes that despite a good correlation between serum PRL and adenoma size, PRLoma remains a distinct possibility in cystic suprasellar lesions even with modestly elevated PRL and when in doubt, a trial of dopamine agonist should be considered.

Pulmonary Neuroendocrine Carcinoma Metastasis to the Thyroid in a Background of Multinodular Goiter and Immune-Related Thyroiditis

Alex Pecce*,
Mustapha Tehfe,
Ramy Samaha,
Rebecca Leboeuf,
Olguta-Ecaterina Gologan,
Marc-André Léger,
Agnès Räkel

Université de Montréal

VIEW POSTER

Introduction: Thyroid metastases are uncommon, accounting for less than 1% of thyroid malignancies, and they most frequently originate from renal and lung primaries. Altered microenvironment in thyroid disease may predispose to metastasis. We present a case of thyroid metastasis from pulmonary large cell neuroendocrine carcinoma in a patient with Graves' disease, multinodular goiter, and immunotherapy-induced thyroiditis.

Clinical Case: A 54-year-old woman with a history of Graves' disease and multinodular goiter presented with respiratory symptoms. Imaging revealed a 5 cm right lung mass; EBUS confirmed non-small cell lung carcinoma (NSCLC). A baseline PET scan also identified a millimetric left thyroid lesion (SUV max 3.4), later characterized by ultrasound as a TIRADS 4 isthmic nodule. The patient underwent three cycles of neoadjuvant chemoimmunotherapy, during which she developed immune checkpoint inhibitor-induced thyroiditis (TSH 85.43 mIU/L, T4 4.8 pmol/L), successfully managed with levothyroxine. Bilobectomy revealed a mixed large cell neuroendocrine carcinoma (LCNEC) and adenocarcinoma, followed by four cycles of adjuvant chemotherapy. On follow-up PET, the thyroid lesion had enlarged to 26 × 16 mm (SUV max 10.8). Fine-needle aspiration revealed a poorly differentiated carcinoma with morphology similar to the lung tumor. Total thyroidectomy confirmed thyroid metastasis of pulmonary LCNEC (CD56+, PAX8−, TTF1−). Postoperatively, no residual thyroid lesion was seen on neck CT, and the patient remained euthyroid on levothyroxine. However, she subsequently developed central nervous system metastases. Clinical Lesson Thyroid metastasis is rare and should be suspected in the setting of synchronous cancer, potentially more so if there is history of underlying thyroid disease.

A Case of Human Chorionic Gonadotropin-Induced Thyrotoxicosis in the Setting of Metastatic Testicular Cancer

Katherine Drummond*, Jeannette Goguen

McGill University

VIEW POSTER

Background: Human chorionic gonadotropin (hCG)-induced hyperthyroidism is a rare condition that arises from cross-reactivity between the β-subunit of hCG and the thyroid-stimulating hormone (TSH) receptor. While most frequently observed during pregnancy, hCG-induced thyrotoxicosis may occur as a paraneoplastic syndrome in hCG-producing malignancies, including non-seminomatous germ cell tumors.

Case: A previously healthy 27-year-old male presented to our institution with scrotal pain and swelling. Imaging revealed a solid testicular mass with diffuse lymphadenopathy, and oncology assessment confirmed the diagnosis of metastatic non-seminomatous germ cell tumor. Laboratory studies demonstrated suppressed TSH (< 0.01 mIU/L) and elevated free thyroxine (fT4) (31 pmol/L), consistent with thyrotoxicosis, although the patient was clinically asymptomatic. Work-up revealed markedly elevated serum hCG (>273,600 IU/L) in keeping with hCG-induced thyrotoxicosis. Alternative causes of his hyperthyroidism were excluded with normal thyroid imaging and negative thyrotropin receptor antibodies. He was initiated on methimazole 2.5 mg every other day due to recent iodinated contrast exposure and associated risk of thyroid storm. His thyroid function improved after a single cycle of chemotherapy (TSH 0.02, fT4 10.2 pmol/L), allowing dose reduction to 2.5 mg twice weekly. Following four cycles of chemotherapy, the patient achieved biochemical euthyroidism (TSH 2.81 mIU/L, fT4 16 pmol/L), hCG decreased to near-normal (16 IU/L), and methimazole was discontinued.

Discussion: Paraneoplastic hCG-production is a rare cause of thyrotoxicosis and is often subclinical. Management relies on treatment of the hCG-secreting tumor, although anti-thyroidal medications may be considered in select cases, such as after iodinated contrast exposure, to mitigate the risk of thyroid storm.

A Novel Mechanism of Hypercalcemia in a Patient with Breast Cancer?

Dalton Budhram*,
Omar Elbardisy,
Shirine Usmani

University of Toronto

VIEW POSTER

Background: Hypercalcemia in breast cancer carries a poor prognosis. While skeletal metastases and parathyroid-related peptide (PTHrP) are the most common mechanisms, elevated calcitriol has been reported. We present a novel case of treatment-resistant hypercalcemia in a patient with breast cancer driven by all mechanisms of hypercalcemia of malignancy.

Clinical Case: A 74-year-old woman with metastatic BRCA1-positive breast cancer presented with confusion and recurrent severe hypercalcemia. Her breast cancer progressed to liver and bone metastases despite mastectomy and chemotherapy. On admission, calcium was 4.44 mmol/L (2.20-2.62), with suppressed parathyroid hormone (PTH 1.4 pmol/L;2.0-9.4). Further investigation revealed elevated PTHrP (93 pg/mL;11-20) and 1,25-dihydroxyvitamin D (214 pmol/L;48-190). Imaging confirmed progressive bone metastases with rib destruction. She was treated with IV fluids, zoledronic acid, and calcitonin with partial effect. Given elevated calcitriol, prednisone was initiated with transient improvement, but hypercalcemia recurred. Repeat courses of calcitonin and prednisone yielded only partial responses. Denosumab (three weekly doses of 120 mg) was trialed with suboptimal response, and she was ultimately IV fluid-dependent with persistent hypercalcemia (2.5-3). Considering her refractory hypercalcemia and disease progression, a collective decision was made to discontinue systemic therapy and focus on her comfort.

Conclusion: This case highlights a diagnostic and therapeutic challenge. Although we are unable to perform immunohistochemistry for alpha-1 hydroxylase to confirm calcitriol production in breast cancer tissue, an alternative cause was not identified. There is a need for greater recognition and study of calcitriol-mediated hypercalcemia in breast cancer as a possible mechanism in treatment-resistant patients.

A Case of Oncocytic Thyroid Cancer Developing from a Toxic Nodule After RAI Ablation

Connor Harrigan*,
Arshia Beigi,
Diana Lam

University of
British Columbia

Background: Radioactive iodine (RAI) ablation is the preferred treatment for toxic, hyperfunctioning thyroid nodules and typically uses substantially lower radioiodine doses than those used in thyroid cancer therapy. Although the literature on the risk of subsequent thyroid cancer following RAI treatment for hyperthyroidism is mixed, the absolute risk of malignancy is considered low, regardless of the treatment indication.

Case Presentation: A healthy woman in her twenties, with no known thyroid cancer risk factors, was found to have a right thyroid nodule on exam. Ultrasound revealed a 2.9 cm TI-RADS 4 nodule, and fine needle aspiration (FNA) showed a benign follicular nodule. Within one year, she developed clinical hyperthyroidism, and an RAI uptake and scan confirmed a 3.7 cm toxic nodule in the right thyroid. As such, she underwent RAI ablation with 14 mCi of I-131. At one-year follow-up, repeat ultrasound demonstrated interval growth of the previously treated autonomous nodule (now 3.6 cm). A repeat FNA revealed papillary thyroid carcinoma. She subsequently underwent a right hemithyroidectomy for a unifocal, 3 cm minimally invasive oncocytic carcinoma (pT2 pN0a) and remains under active surveillance.

Discussion: We report a rare case of an oncocytic thyroid carcinoma arising from a previously benign toxic nodule following RAI ablation. In the absence of predisposing factors, this raises the possibility that low-dose RAI exposure contributed to malignant transformation, although causality remains uncertain.

VIEW POSTER

Oncocytic Adrenocortical Carcinoma with Cushing Syndrome

Mohammad Alrashdan*

University of British Columbia

VIEW POSTER

Background: ACTH-independent Cushing syndrome in the context of OACC is exceedingly rare, with very few case reports in the literature.

Clinical Case: A 62-year-old man presented with typical signs and symptoms of hypercortisolism, progressing to psychosis requiring hospital admission and extensive work-up. Initial evaluation revealed elevated 24-hour urinary cortisol of 1524 nmol/d (10-166). CT imaging of the abdomen and pelvis demonstrated a 5.1 x 4.6 x 4.3 cm left adrenal non-calcified mass, suspicious for malignancy. Due to severe psychiatric manifestations of hypercortisolism, ketoconazole was initiated prior to left adrenalectomy. Pathology revealed low-grade OACC, 7.1 cm, with an elevated mitotic rate of 9 per 50 HPF and Ki-67 positivity of 15-20% with areas of probable necrosis and probable sinusoidal invasion. Postoperatively he was started on mitotane and concurrent radiotherapy. Postoperatively, the patient was reviewed at tumour board rounds and deemed high risk based on his S-GRAS score, thus it was decided to proceed with mitotane, and adjuvant radiotherapy. Chemotherapy was not recommended as essential therapy, given the low-grade oncocytic type. Postop he had a residual lesion, which has shrunken on most recent scan. And no evidence of distant mets. Patient has had multiple complications from the mitotane including hyperlipidemia, hypogonadism, and hypothyroidism.

Conclusion: This case report emphasizes the rare occurrence of OACC presenting with Cushing syndrome. It further highlights the diagnostic and therapeutic challenges associated with this rare subtype and the importance of multidisciplinary management in the care of patients with OACC.

Extragonadal HCG-Secreting Germ Cell Tumour as a Rare Cause of Gynecomastia

Megan Grundy*,
Gregory Kline

University of Calgary

VIEW POSTER

Background: HCG-secreting tumours represent a rare but clinically important cause of gynecomastia. Testicular germ-cell tumours are the most common paraneoplastic source of HCG, however extragonadal HCG-secreting tumours may also occur.

Case: An otherwise healthy male in his 50s presented with breast enlargement and tenderness. On review, he reported anorexia, fatigue, weight loss, and night sweats. On examination he had bilateral tender breast buds, and hepatomegaly. His total testosterone was normal (25.2, ref 8.0-35.0 nmol/L), with an elevated estradiol (787, ref >160 pmol/L), suppressed LH (< 0.3 IU/L), and normal prolactin. Serum HCG was markedly elevated at 16,558 IU/L (ref < 5 IU/L), AFP was normal, and LDH was elevated (360, ref 120-250 U/L). He had a normal chest x-ray and testicular ultrasound. PET CT showed a large tumour at the distal esophagus with hepatic metastases. Pathology showed poorly differentiated carcinoma. However, based on the elevated HCG, LDH, and midline tumour location, the patient was diagnosed with extragonadal metastatic germ cell tumour, and started on chemotherapy. Unfortunately, while his HCG reduced significantly, the esophageal mass and liver metastases progressed and the patient ultimately died 3 months after his initial presentation.

Discussion: Outside of germ cell tumours and pregnancy, the differential for elevated HCG includes non-germ cell paraneoplastic sources, pituitary production, exogenous administration of HCG, and assay interference (heterophile antibodies). While rare, extragonadal HCG-secreting germ cell tumours may present to Endocrine care as a cause of gynecomastia, and a high-degree of suspicion must be maintained for a malignant source despite normal testicular imaging.

Myxedema Coma in Active Graves' Disease: A Rare Case of Methimazole Overtreatment

Manish Hosanee*, Joseph Leung

University of British Columbia

A 32-year-old male with underlying Graves' disease on Methimazole, and poly-substance use disorder, presented shortly after release from incarceration with profound exertion dyspnea, and hypotension. He has underlying Grave's disease with a history of medication non-adherence on Methimazole. While he was incarcerated 3 months prior, he was noted to be in thyrotoxicosis, with a TSH < 0.01, T4 58.1, T3 >30.8; his Methimazole increased to 20mg BID. While incarcerated, he did not have access to his community endocrinologist. Upon presentation to the Emergency Department, he was noted to be in SCAI-C cardiogenic shock requiring intubation and vasopressors. He had findings of rapidly progressive multi-organ failure including significant hepatitis, and acute kidney injury. Given his significant clinical deterioration, he was eventually transferred Intensive care unit at another tertiary care centre for further assessment. He was found to have a TSH 9.24, T4< 3.0 and a T3 of 2.4, with a Popoveniuc-Wartofsky score >70, consistent with myxedema coma. Echocardiography demonstrated severe cardiomyopathy with ejection fraction < 20%. He was managed with IV levothyroxine, stress-dose steroids, vasopressors. Once stabilized, repeat TSH receptor antibody remained elevated (20.7 IU/L), indicating active Grave's disease. He rapidly reverted to thyrotoxicosis despite stopping levothyroxine, necessitating re-initiation of methimazole with close outpatient endocrinology follow-up. This case highlights the complex interplay between treatment adherence and regular monitoring of disease activity, especially among patients who are incarcerated and have limited healthcare access, emphasizing the importance of access to specialist care among patients in this demographic.

VIEW POSTER

Pituitary Hypophysitis and Hypopituitarism Associated with Dupilumab Use: A Case Report

Rafia Saboor*,
Rihaf Algain,
Luciana Martel-Duguech

University of Ottawa

VIEW POSTER

Background: Hypophysitis is a rare cause of pituitary dysfunction, most often linked to immune checkpoint inhibitors. Dupilumab, an interleukin-4 receptor antagonist used for asthma, refractory COPD, and atopic dermatitis has not been widely associated with this complication.

Case Presentation: A 75-year-old woman with COPD on triple therapy and dupilumab (2023–May 2025), and type 2 diabetes, presented in June 2025 with six months of progressive headache, nausea, and poor intake. Physical Examination: She had no visual field deficits or cranial neuropathies. Investigations: CT/MRI (Jun 2025): Solid sellar lesion with minimal suprasellar extension.

Differential: adenoma, hyperplasia, hypophysitis. Pituitary function: Low free T4 and low morning cortisol, consistent with central hypothyroidism and adrenal insufficiency. Treated with levothyroxine and stress-dose glucocorticoids, later transitioned to hydrocortisone 20/10 mg.

Course: Developed AVP insufficiency requiring desmopressin. Repeat MRI (Aug 2025): Significant improvement with only mild pituitary fullness and a tiny cystic focus; no residual mass.

Assessment: Findings are most consistent with drug-induced hypophysitis, likely secondary to dupilumab since there is interval clinical and radiologic improvement a few months post discontinuation of the drug. On subsequent follow ups, she has not needed further desmopressin. Biopsy was deferred given interval improvement and patient preference.

Future Directions: Ongoing pituitary hormone testing will determine the need for continued hydrocortisone and levothyroxine, with potential for full recovery. This case highlights a novel association between dupilumab and hypophysitis, expanding awareness of rare endocrine adverse events of biologic therapy.

Secular Trends in the Association Between Diabetes Duration and Cardiovascular Events: A Population-Based Cohort Study in Ontario

Tharsan Kanagalingam*, Calvin Ke

University of Toronto

VIEW POSTER

Background: We previously reported that diabetes is no longer equivalent to prior cardiovascular disease (CVD) as a risk factor for cardiovascular events. However, the influence of diabetes duration is unclear.

Objective: To examine secular trends in the associations of diabetes (categorized by diabetes duration) and prior CVD with cardiovascular events, stratified by attained age.

Methods: We conducted a population-based cohort study including adults aged 20–84 years, observed during 1999–2004 and 2014–2019 (two cohorts). The exposures were prior diabetes (categorized by disease duration) and prior CVD. The comparison group included those with neither condition. The outcome was cardiovascular events (hospitalization for acute myocardial infarction or stroke, all-cause mortality). We used modified Poisson regression to determine the association between each exposure and the outcome, stratified by attained age, offset by follow-up duration.

Results: There were n= 2,013,635 (1999) and n= 2,478,591 (2014) individuals (Table). In 1999, the relative risk (RR) of cardiovascular events for having diabetes of 5–9 years attained by ages 40–50 years was similar to having prior CVD at ages 40–50 years, compared to people with neither condition (e.g., RR, age 40 years: 5–9 year diabetes duration, 4.56 [3.42–6.09]; prior CVD, 4.45 [4.16–4.77]; Figure).By 2014, the RR of cardiovascular events associated with all durations of diabetes was lower than the RR associated with prior CVD without diabetes (e.g., RR, age 40 years: ≥10 years' duration diabetes, 3.52 [3.30–3.78]; prior CVD, 4.43 [4.13–4.78]).

Conclusions: Diabetes, of any duration, is no longer equivalent to prior CVD as a risk factor for cardiovascular events.

Improving Documentation Efficiency and Learning Through Guideline-Directed Standardized Endocrinology Clinic Templates: A QI Initiative

Yousif Alrodhan*,
Shoba Sujana Kumar

University of Toronto

VIEW POSTER

Background: Documentation burden in outpatient endocrinology contributes to clinician burnout and reduces educational time for trainees. At our institution, endocrine learners reported staying late to complete notes. While select specialized clinics had standardized templates and were perceived as more efficient, general endocrine clinics lacked them.

Objective: To reduce average documentation time by 20% in general endocrine clinics by trainees and staff by July 2025 through the implementation of standardized EPIC templates for 13 common endocrine conditions.

Methods: Using the Model for Improvement framework, guideline-directed templates were created for common endocrine conditions (excluding diabetes, osteoporosis, and obstetrical endocrinology). Learners completed pre- and post-intervention surveys to assess template usage, efficiency, and educational value. Staff were surveyed separately to assess similar parameters. Documentation time was assessed using SIGNAL, a backend analytics application integrated into EPIC.

Results: Template adoption was robust at 56% of all new consults. Post-intervention, 50% fewer learners reported spending over 15 minutes per consult note. Most reported improved confidence in managing endocrine conditions and perceived educational value. 60% of staff noted improved resident efficiency and assessments. SIGNAL data suggested a downward trend in documentation time, though interpretation is limited by potential confounders. Final time data is pending at the time of submission.

Conclusions: Standardized endocrine clinic templates were associated with perceived improvements in both documentation efficiency and clinical education. Ongoing refinement and expansion of this low-cost intervention may enhance physician wellness and trainee experience.

The Use and Effect of GLP1-RA Use on Glycemic Metrics in Patients with Type 1 DM: A Retrospective Data

Mohamed Aman, Shamma Boushahri*, Bader Alamri

McMaster University

VIEW POSTER

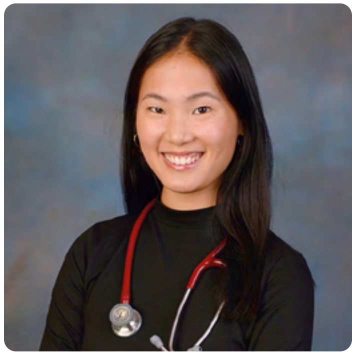
Introduction: T1DM is an autoimmune condition marked by β-cell destruction and absolute insulin deficiency. Despite modern insulin and glucose monitoring tools, only 24% of adults achieve HbA1c < 7%. Obesity is also rising in this population. GLP-1 receptor agonists, proven effective in weight loss and glycemic control in T2DM, are being studied as adjuncts in T1DM. This study assessed their impact on metabolic outcomes in adults with T1DM at a tertiary center.

Methods: We conducted a retrospective chart review of adults (≥18 years) with T1DM who were prescribed GLP-1 RAs for at least 3 months between January 2022 and December 2024 at the tertiary Diabetes Clinic. Patients were identified using the SlicerDicer tool in EPIC, and relevant data were manually extracted, including demographics, weight, BMI, HbA1c, and CGM metrics at baseline and follow-up.

Results: Of 130 charts reviewed, 57 patients met inclusion criteria. The median age was 51 years, and 66.7% were female. Over 85% received semaglutide. Mean weight decreased from 102 kg to 93.8 kg ($p < 0.0001$), BMI from 34.8 to 32.0 ($p < 0.0001$), and HbA1c from 7.8% to 7.4% ($p < 0.0001$). No statistically significant changes were observed in CGM metrics, including time in range, time above range, and time below range.

Conclusions: GLP-1 RA use in adults with T1DM was associated with improvements in weight, BMI, and HbA1c. However, glycemic changes as assessed by CGM were not statistically significant. Prospective controlled trials are needed to validate these findings and assess long-term efficacy and safety.

The Genetic Prediction and Classification of Adult-onset Type 1 Diabetes Using Polygenic Scores



Noémie Desgagnés*, Wiame Belbellaj, David R. Morrison, Tianyuan Lu, Nadine Taleb, Aaron Deutsch, Miriam Udler, Celia M.T. Greenwood, Constantin Polychronakos, Brent Richards, Despoina Manousaki

McGill University

VIEW POSTER

Background: Diagnosing adult-onset type 1 diabetes (T1D) is challenging due to overlap with type 2 diabetes (T2D) and latent autoimmune diabetes in adults (LADA). Misclassification may delay optimal treatment or exclude patients from disease-modifying therapy, such as teplizumab. Polygenic risk scores (PRS) offer a promising tool for prediction and classification but were mainly derived from European, childhood-onset cohorts, with limited validation in adult-onset disease and diverse ancestries.

Objectives: In order to evaluate whether PRS can improve genetic prediction and classification of adult-onset T1D across ancestries, this study aims: To compare the performance of a European-derived T1D PRS (GRS2x), a trans-ancestry T1D PRS (TA-PS), and a LADA PRS in distinguishing adult-onset and childhood-onset T1D from healthy controls. To evaluate the accuracy of these PRS, alone and combined with a T2D PRS, in differentiating adult-onset T1D from T2D. To validate PRS performance in a prospective, single-center LADA cohort (~200 participants).

Methods: We will analyze imputed genotypes or sequencing data from nine cohorts, including cases of clinically defined T1D (N=3,567), early-onset T2D (< 50 years; N=19,111), and controls (N=645,699) of various ancestries. Using these data , we will compute GRS2x, TA-PS, a newly developed LADA PRS, and T2D PRS measures, in T1D cases, T2D cases and controls. Performance will be assessed by AUROC, precision-recall curves, sensitivity, and specificity.

Anticipated impact: By validating genetic tools which can accurately classify or predict T1D in adulthood, our research will advance knowledge on adult-onset T1D, including LADA, and contribute to efforts to make polygenic risk scores more transportable across ages and ancestries.

Retrospective Real World Analysis of Insulin Pump and CGM Technologies on Glycemic Metrics in a Large Type 1 Diabetes Clinic

Karl Vantomme,
Samin Dolatabadi*,
Robyn L. Houlden,
Bikrampal Sidhu

Queen's University

Objectives: Automated Insulin Delivery (AID) is recommended for type 1 diabetes; however, access barriers exist. We performed a retrospective analysis of an outpatient adult type 1 diabetes clinic to assess the use of insulin pump, continuous glucose monitoring (CGM), and AID on glycemic metrics.

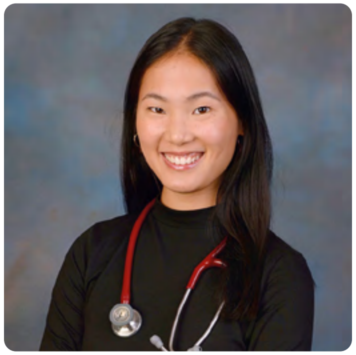
Methods: Health Record data was examined from January 2024 to April 2025 for the most recent visit on technology use, A1C, CGM metrics, and rates of DKA/severe hypoglycemia for the preceding year.

Results: 794 patients were identified: females 56.7%, mean age 45.6 years (SD 16.8), mean diabetes duration 25.5 years (SD 14.9), Basal Bolus Insulin (BBI) use by 24%, and pump use by 76%. CGM was used by 71.2% of BBI and 93.4% of pump users. Mean pump duration was 11.3 years (SD 6.9). AID was used by 62.8% of pump users: Tandem Control IQ™ 78.1%, Medtronic SmartGuard™ 19.1%, and Omnipod™ with Looping 2.8%. Severe hypoglycemia/DKA rates were low and insufficient for comparison. Of pump users, 30.6% were using CGM not compatible with their pump AID. Mean A1C differed among types of insulin delivery (Figure 1). A1C did not differ between BBI without CGM and insulin pump without CGM, and BBI with CGM and pump with CGM. Sensor use was associated with a lower A1C. Use of AID was associated with lower A1C; more Time in Range; less Time Below Range and Time Above Range; and less glycemic variability.

Conclusions: Efforts are needed to increase accessibility to AID for all people with type 1 diabetes.

VIEW POSTER

Creation of A Canadian Type 1 Diabetes Genetic Data Repository to Validate a Trans-Ancestral Genetic Risk Score



Noémie Desgagnés*,
Andrew Paterson,
Angeliki Makri,
Ashish Marwaha,
Carol Huang,
Elizabeth Rosolowsky,
Lucie Dupuis,
Nadine Taleb,
Rémi Rabasa-Lhoret,
Constadina Panagiotopoulos,
Richard A. Oram,
Constantin Polychronakos,
Diane K. Wherrett,
Despoina Manousaki,
Farid H. Mahmud

McGill University

Introduction: The CanScreenT1D research consortium was established to investigate the feasibility and acceptability of type 1 diabetes (T1D) screening in the Canadian general population. This ancillary project aims to evaluate the performance of a trans-ancestral T1D polygenic risk score (PRS) as a tool for population T1D screening, to prioritize individuals for autoantibody screening.

Objectives: To validate a trans-ancestral T1D PRS (TA-PS) in Canada's diverse population and compare its performance to a European-derived score (GRS2x). To create a trans-ancestral genetic data repository for T1D. To assess the acceptability of a genetic screening program across various ancestries.

Methods: Prospective salivary DNA samples will be collected from non-European ancestry participants with T1D through three Canadian pediatric centers and a Pan-Canadian T1D registry. Available samples from three existing pediatric T1D biobanks will also be included, for a total of 1000 samples. Following genotyping and TopMed imputation, this data will be used to compute GRS2x and TA-PS, and compared to ancestry-matched controls from the Spit for Science study. The scores' performance will be assessed using AUROC, sensitivity and specificity. Semi-structured interviews with prospectively recruited participants will explore the ancestry-specific acceptability of using genetic tools to predict T1D risk.

Anticipated impact: The validation of a trans-ancestral T1D PRS will inform the use of genetic risk scores in a pilot Canadian T1D screening program. The genetic data repository will support future studies to better understand the genetic architecture of T1D across ancestries. Our project will also provide insights into the acceptability of genetic screening in various ancestral groups.

VIEW POSTER

Describing Patterns of Acute Diabetes-related Hospital Admissions in a Northern Canadian Region: A 10-year Retrospective Cohort Study

Armin Farahvash,
Meagan Noble*,
Azadeh Mofid

Northern Ontario
School of Medicine

VIEW POSTER

Objectives: Acute diabetes-related admissions including diabetic ketoacidosis (DKA) and hyperosmolar hyperglycemic state (HHS) impose significant burden on patients and healthcare systems. The prevalence of diabetes in Northern Canada is above the national average, and this population is underrepresented in the literature. We aimed to identify patterns of acute diabetes-related admissions and readmission rates in this population.

Methods: We conducted a retrospective cohort study of residents admitted to a tertiary centre in Northern Canada with DKA or HHS between January 2015 and December 2024, using ICD-10 codes. We collected baseline diabetes-related demographics, length of stay (LOS), readmissions, and mortality. Primary outcome was 30-day readmission for DKA/HHS. Interim

Results: A total of 876 patients with DKA/HHS were identified; 389 patients accounting for 618 admissions have been reviewed. Mean age was 44.5±19.9 years, and 193 (49.6%) were female. Additionally, 109 patients (28.0%) had type 1, 269 (69.2%) had type 2, and 11 (3.0%) had unknown diabetes type. Mean diabetes duration was 12.9±11.1 years, and mean HbA1c was 11.6±2.4%. Most common precipitants were medication non-adherence (43.4%), infection (37.1%), and substance use (20.8%). Eighty-two patients (14.7%) presented as first diabetes diagnosis. The mean LOS was 8.2±18.1 days with 251 admissions (41.4%) involving ICU stay. The 30-day DKA/HHS readmission rate was 4.7% (29 patients) and 90-day mortality was 3.6% (22 patients).

Expected Outcomes: We expect a consistent trend with the completion of our data collection. We plan to conduct secondary analysis on predictors of readmissions, based on type of diabetes and DKA versus HHS.

Adoption of SGLT2 Inhibitors and GLP1 Receptor Agonists in Ontario Long-Term Care Residents with Diabetes: A Population Cohort Study of 15 Years

Armin Farahvash*, Dorsa Ghahramani, Mina Tadrous, Wade Thompson, Lisa M. Mccarthy, Iliana Lega

Northern Ontario School of Medicine

VIEW POSTER

Background: SGLT2-Is and GLP1-RAs are newer antihyperglycemic agents that have gained increasing popularity. In long-term care (LTC) residents, who often have frailty, dementia, and multimorbidity, their benefits and risks are uncertain. We aimed to evaluate trends in antihyperglycemic agents among LTC residents following introduction of SGLT2-Is and GLP1-RAs.

Methods: We conducted a repeated cross-sectional study within a cohort of LTC residents with diabetes in our province ≥66 years between January 2010 and October 2024. We utilized a linked administrative healthcare databases to determine the quarterly prevalence of antihyperglycemic medications. Demographics including age and sex were collected.

Results: We included 132,410 LTC residents with a mean age of 83.2±7.54 years, where 78,341 (59.2%) were female. From 2010 to 2024, use of sulfonylureas and insulin declined by 81.6% and 31.7% to 37.5 and 185 users/1000 residents, respectively. Similarly, metformin use decreased by 42.5% to 225 users/1000 residents. Since their introduction, use of SGLT2-Is and GLP1-RAs increased consistently, to 173 and 54.9 users/1000 residents by 2024. While metformin remains the most prevalent antihyperglycemic agent prescribed overall, in younger residents (age < 76 years) SGLT2-Is have emerged as the most common agent since 2021.

Conclusions: Since 2010, use of insulin and sulfonylureas, high-risk agents for hypoglycemia, has steadily declined in LTC residents, while prescriptions for SGLT2-Is and GLP1-RAs have increased. Despite metformin remaining guideline-recommended first-line therapy, its use declined over the 15-year study period. These trends raise concern given limited evidence on safety and efficacy of newer antihyperglycemic agents in frail older adults.

Disparities in Glycemic Control in Pediatric Type 1 Diabetes: Urban/Rural Differences

Austin Pietramala*, Tom Warshawski, Trent Smith, Melissa Braschel, Christine Voss

University of Manitoba

VIEW POSTER

Background: Individuals with type 1 diabetes (T1D) who live in rural settings tend to have poorer glycemic control than urban residents. Less is known about children and youth with T1D in rural Canada.

Objective: To describe longitudinal patterns of glycemic control in children and youth with T1D, and to describe urban/rural differences.

Methods: We conducted a retrospective chart review of all electronic medical records of the regional health authority between January 1, 2015 and December 31, 2019. Included were individuals aged 0–19 yrs with a T1D diagnosis. A1C records < 3 months since diagnosis were excluded. Patients' home location was classified as urban or rural according to Statistics Canada criteria. A linear generalized additive model was used to flexibly examine median A1C over time by age and rural/urban classification.

Results: There were n=443 unique individuals (50% female). Median (IQR) age was 12.0 (9.5, 15.0) yrs, median age at diagnosis was 9.7 (5.8, 12.7) yrs, and 26% of individuals lived in rural settings (n=114). Median A1C values were 8.4 (7.6, 9.4) %. There were significant age-related increases in A1C values, peaking at approximately 9% at 15 yrs of age. A1C values were significantly higher in those from rural vs urban settings during adolescence, with mean differences (95%CI) peaking at 0.48 (0.16–0.79) % at 15 yrs.

Conclusion: While limited access to specialist care and diabetes technology are known to contribute to urban/rural disparities, why we observed urban/rural differences only in adolescents but not children warrants further exploration.

Orthodox Christian Fasting and Glycemic Outcomes in Type 2 Diabetes

Brook Tesfaye*,
Tedla Kebede,
Yoseph Tolcha,
Mahlet Tadesse Regassa,
Meti Wole Gurmu

Addis Ababa University

VIEW POSTER

Objective: To assess the impact of Orthodox Christian fasting on glycemic control, anthropometric and lipid parameters, and hypoglycemia risk among patients with type 2 diabetes.

Method: A prospective comparative cohort study was conducted among adults with type 2 diabetes who either fasted or did not fast during the Great Lent fasting period of 2025. Baseline and post-fasting data were collected via a structured questionnaire. Measurements for weight, BMI, and waist circumference were taken, and laboratory tests for HbA1c, FBS, and lipid profile were conducted at both time points. Paired and independent t-tests were done to detect within- and between-group differences. Multiple regression analysis was done to identify predictors of hypoglycemia in the fasting period. ANCOVA was used to adjust for baseline imbalances.

Results: 128 participants were studied (64 each in the fasting and non-fasting groups). Both groups showed significant within-group reductions in HbA1c (0.4% vs 0.6%), but no statistically significant between-group differences were observed (p=0.501). Similar findings were noted with weight, BMI, and waist circumference. Lipid parameters showed trends towards greater improvement in the fasting group. Hypoglycemia occurred in 25.0% of the total population and was comparable between the groups. However, frequent and severe hypoglycemia occurred more in the fasting group. The presence of diabetic kidney disease was an independent predictor of hypoglycemia in the fasting group [AOR: 10.9 (1.4, 86.3)].

Conclusion: Orthodox Christian fasting may be safely practiced by many individuals with type 2 diabetes, but individualized risk assessment, structured education, and treatment adjustment are essential.

Exploring Cancer and Health Related Worry in Medullary Thyroid Carcinoma Survivors

Gabriela Szuman*, Shereen Ezzat, Phillip Segal, Anna M. Sawka

University Health Network

VIEW POSTER

Introduction: Survivorship concerns of individuals diagnosed with Medullary Thyroid Carcinoma (MTC) are unknown.

Objective: To evaluate cancer-related worry in MTC patients using the Assessment of Survivor Concerns (ASC) questionnaire. Subjects: Adult patients (≥18 years) with MTC, treated at a tertiary care centre between January 1, 2000–August 1, 2025.

Methods: In this ongoing cross-sectional study, consenting participants self-administer a written/online questionnaire. Clinical, treatment, and outcome data are abstracted from medical records. The ASC questionnaire measures cancer worry (score range 3–12), health worry (range 2–8), and overall worry (range 5–20), with higher scores indicating greater worry. The mean scores and standard deviations (SD) are reported.

Results: As of August 1, 2025, 70 participants were enrolled. The median age is 56.5 years (inter-quartile range 48–67 years); 64% are female. Nearly half (49%) of study population was diagnosed >10 years ago; 26% carry a RET germline variant. Most (97%) underwent surgery, 24% had multiple surgeries, 24% underwent neck stereotactic body radiation therapy, and 11% are receiving systemic therapy. The mean cancer worry score is 7.78 (SD 1.95), health worry 5.17 (SD 1.46), and overall worry 12.95 (SD 2.44). About a third of participants reported worrying "very much" about potential recurrence (32.8%) and general health (30%).

Expected outcomes: Data acquisition is still in progress. Future analyses on the complete dataset will explore potential demographic/clinical associations with increasing cancer-related worry.

Conclusion: MTC patients experience significant cancer-related worry, underscoring the need for targeted psychosocial support in survivorship care of this group.

Material Deprivation and Risk of Diabetes, Hypertension, and Cardiovascular Disease in Young and Middle-Aged Women: A Preliminary Review

Shima Kianifard*, Kaberi Dasgupta

McGill University

VIEW POSTER

Background: Global studies highlight rising cardiometabolic disease burden in younger populations, but the relationship between deprivation and cardiometabolic outcomes in younger Canadian women remains underexplored. We aimed to examine reported associations between material deprivation and diabetes, hypertension, and cardiovascular disease (CVD) in this population.

Methods: In this preliminary review, we extracted relevant information from our previous studies focusing on associations of gestational diabetes, gestational hypertension, and preeclampsia with diabetes, hypertension, and CVD. All accounted for small-area level material deprivation. We additionally searched for relevant studies by Canadian Epidemiology Group members (PubMed). We organized abstracted relevant data.

Results: We identified 18 studies. Six were relevant but two did not report findings in women separately. The 4 retained from our group (496,212 women; all our group; Quebec) included. Three evaluating women with two or more live births (median follow-up 11 years), while one evaluated women with one or more live births (mean follow-up 13 years). Compared to the least deprived, there was a stepwise risk increase with higher deprivation. For diabetes, HRs ranged from 1.03 (95% CI, 0.88–1.20) to 1.67 (95% CI, 1.57–1.77); for hypertension, from 1.19 (95% CI, 1.09–1.31) to 1.32 (95% CI, 1.27–1.38); and for CVD, from 1.32 (95% CI, 1.07–1.63) to 1.70 (95% CI, 1.54–1.88).

Conclusion: Our preliminary findings indicate that material deprivation is associated with higher risks of future diabetes, hypertension, and cardiovascular disease in reproductive-age women. These findings support the need for a wider systematic review and further study in Canada.

CONTACT US

192 Bank Street | Ottawa, ON | K2P 1W8
info@endo-metab.ca
613.594.0005
www.endo-metab.ca

CSEM
The Canadian Society of Endocrinology and Metabolism

SCEM
La Société canadienne d'endocrinologie et de métabolisme