are eligible to participate. Assessments include the Behavioral Improvement Questionnaire (BIQ), the Quality-of-Life Inventory-Disability (QI-Disability) Questionnaire, and the Gastrointestinal Health Questionnaire. Due to ongoing enrollment, data are reported to 9 months since the initiation of trofinetide. Results: In total, 192 patients were included. The median dose reported at week 1 was 45.0% of the target weight-banded label dose; by week 9 onwards, the median dose was at least 80.0% of the target weight-banded label dose. Behavioral improvements reported with the BIQ were nonverbal communication (49–62%), alertness (43–62%), and social interaction/connectedness (32–52%). The QI-Disability Questionnaire median total scores indicated overall improvement in quality of life (QoL) with trofinetide. Caregivers reported that patients were most likely to void normal stools over the follow-up; most reports of diarrhea were contained inside the patient's diaper. Conclusions: Caregivers of patients with RTT in LOTUS reported behavioral improvements of RTT symptoms and improvement in patients' QoL.

P.082

Real-world benefits and tolerability of trofinetide for the treatment of pediatric and adult patients with Rett Syndrom: the LOTUS study

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doi: 10.1017/cjn.2025.10243

Background: Trofinetide is approved for the treatment of Rett syndrome (RTT) in patients aged ≥2 years. Here, we present the benefits and tolerability of trofinetide in pediatric and adult patients with RTT from the LOTUS study. Methods: Caregivers of patients who are prescribed trofinetide under routine clinical care are eligible to participate. This subgroup analysis of the 12-month follow-up of LOTUS focused on pediatric (0–17 years of age) and adult (≥18 years of age) patient populations. Due to ongoing enrollment, data are reported to 9 months since the initiation of trofinetide. Results: In total, 117 pediatric and 74 adult patients were included. The median dose reported at week 1 was 45.0% and 41.0% of the target weight-banded label dose for pediatric and adult patients, respectively; by week 8, the median dose was at least 86.0% and 70.0% of target, respectively. Behavioral improvements included nonverbal communication (pediatric: 53–64%; adult: 41–58%), alertness (pediatric: 50–69%; adult: 33–65%), and social interaction/connectedness (pediatric: 36–58%; adult: 26–46%). Most reports of diarrhea were contained inside the patients' diapers. Conclusions: Caregivers of pediatric and adult patients with RTT in LOTUS reported improvements consistent with the general population of the study.

P.083

A novel mutation in YARS2 gene in a patient with MLASA

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doi: 10.1017/cjn.2025.10244

Background: MLASA (myopathy, lactate acidosis and sideroblastic anemia) is a rare autosomal recessive mitochondrial disorder, which affects oxidative phosphorylation and iron metabolism in skeletal muscle and bone marrow. Three genes have been identified so far, *PUS1* is the most common, followed by *YARS2* and *MT-ATP6*. We present a patient with a novel variant in *YARS2* and a literature review. Methods: We report a 20-months-old girl with ptosis and low birth weight. She presented with delayed motor milestones and bulbar weakness with feeding difficulties. She had mild anemia and elevated lactate, echocardiogram revealed a mild to moderate left ventricular hypertrophy without LVOT obstruction. Results: Genetic testing showed two heterozygous variants in *YARS2*. The maternal one (c.948G>T, p.Arg316Ser) has been reported previously in a compound heterozygous state, while the paternal one (c.917T>C, p.Phe306Ser) has not been previously described. Genetic findings were supported by enzyme activities, which showed reduced complex I +III and complex IV activities and reduced cytochrome oxidase (COX). Conclusions: In this case report we describe a 20-months-old girl with clinical features of MLASA. A novel variant in the *YARS2* gene was found, pathogenicity could be proven with clinical phenotype and enzyme activity testing.

P.084

Epidemiology and burden of illness in patients with Rett Syndrome in Ontario, Canada

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doi: 10.1017/cjn.2025.10245

Background: Rett Syndrome (RTT) is an X-linked neurodevelopmental disorder, characterized by gradual loss of motor, verbal and social skills. This study describes the epidemiology and healthcare resource utilization (HCRU) of RTT in Ontario, Canada. Methods: RTT patients (≥ one ICD-10-CA code F84.2) were identified using data held at the Institute for Clinical Evaluative Sciences (ICES), between September 2018-August 2023. Incidence and prevalence rates from Ontario were extrapolated nationally using the Stats Can population estimates. Results: A total of 246 patients were indexed; 95% female, median age 21 years and 40% from central Ontario. There were 57 incident and 257 prevalent RTT cases identified in Ontario. National extrapolations estimated 175 incident and 613 prevalent RTT cases. Common comorbidities included developmental disability (85.4%) and epilepsy (49.6%). Patients frequently had outpatient visits (primary care 96.7%, specialists 86.6%), emergency department visits (76.8%) and inpatient hospitalizations (54.5%). Most patients (95.1%) had at least one public claim for all-cause medication. Disease-specific medication claims were for anti-infectives (69.1%) and anti-seizure medications associated with mood effects (65.0%). Conclusions: This study provides population-based estimates of RTT in Canada. Findings highlight the high burden of illness and HCRU of RTT and the opportunities to improve healthcare outcomes in this population.