Canadian context. Data collection is still ongoing, but once analysis is complete it will provide valuable baseline incidence and etiologic information on severe microcephaly in Canada.

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Final Results of National Surveillance of Childhood Tuberculosis in Canada: 2013–2016

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BACKGROUND: There is little detailed epidemiologic and clinical data about tuberculosis (TB) disease in children in Canada.

OBJECTIVES: This study characterizes the epidemiologic, clinical, and treatment data for all cases of TB in children under age 15 in Canada surveyed through the Canadian Paediatric Surveillance Program's (CPSP) Childhood Tuberculosis Study from October 2013 to September 2016.

DESIGN/METHODS: New active TB cases were identified through a monthly form sent by the CPSP to approximately 2500 active paediatricians, paediatric subspecialists, and select non-paediatricians who manage childhood TB. For cases meeting inclusion criteria, a detailed questionnaire was sent to the treating physician to collect clinical, epidemiological, and treatment data, followed by 6-month follow-up surveys until 6 months after treatment completion. Cases were reviewed by at least one TB specialist for inclusion and classification of disease.

RESULTS: Of 285 unique incident cases reported, 188 cases met inclusion criteria, returned a detailed questionnaire, and were classified. Selected demographic data are shown in Table 1.

92% of cases had intrathoracic involvement (N=172, 91%), but a minority were confirmed by culture or nucleic acid amplification (62/172, 36%). The most common sites of intrathoracic involvement were lymph nodes (N=118, 69%) and lungs (N=54, 31%). There were 143 attempted respiratory microbiological studies, with 32 (22%) yielding a positive culture or NAAT in sputum and 33 (23%) in gastric aspirate. Highest yield was in the 10+ age group with 54% (20/37) positivity.

31 cases of extrathoracic TB were recorded, with 19/35 (54%) having simultaneous intrathoracic TB. The most common forms of extrathoracic TB included CNS or meningeal disease (N=13) and extrathoracic lymphadenopathy (N=11). Miliary or disemminated disease (2 or more non-continguous sites involved) was found in 15 cases (8%).

16 cases reported at least one adverse drug reactions, with pyrazinamide (N=10) and isoniazid (N=5) being most common. 4 children were hospitalized and the most common ADR was hepatotoxicity. There was one case of multi-drug resistant TB.

CONCLUSION: This study suggests a high incidence of TB in Inuit and First Nations children, as well as a higher proportion of extrathoracic TB and greater success in culture positivity in children aged 10+. It also shows a significant number of adverse drug reactions to anti-TB treatment. Further analysis of this data will serve to refine practice in monitoring, detecting, and treating this infection.

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KINDERGARTEN-AGE NEUROCOGNITIVE AND FUNCTIONAL OUTCOMES AFTER LIVER TRANSPLANTATION DONE AT AGE <6 YEARS

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BACKGROUND: Mortality after liver transplant has improved, making long-term outcomes increasingly important.

OBJECTIVES: To describe neurocognitive and functional outcomes after liver transplant done in young children, and determine potentially modifiable risk factors for adverse outcomes.

DESIGN/METHODS: Between 1999–2014, all <6 years old liver transplant recipients at our center were enrolled in this ethics board approved, longitudinal inception-cohort. Demographic, pre-transplant, transplant, and post-transplant data were prospectively collected. Following informed consent, outcomes were determined by experienced paediatric psychologists using Wechsler Preschool and Primary Scale of Intelligence III, Beery-Buktenica Developmental Test of Visual-Motor Integration-V (VMI), and Adaptive Behavior Assessment System-II. Associations with outcomes (Full-Scale intelligence quotient [FSIQ], Performance IQ [PIQ], Verbal IQ [VIQ], VMI and General Adaptive Composite [GAC]) were determined using multiple linear regression. Population norms for each score are mean 100 (SD15).

RESULTS: 78 liver transplants were performed; 69 patients survived, and all completed follow-up. Outcomes for the 60 patients without metabolic disease are reported. FSIQ, PIQ, and VIQ were 94.5 (17.0), 95.4 (17.8), and 93.7 (17.6). VMI and GAC were 91.6 (16.2) and 89.7 (18.0). Outcomes were shifted to the left of population norms, with the proportion having IQ scores >1 SD (score <85, expected 15.9%) and >2 SD (score <70, expected 2.27%) below population norms being: 23.3% and 8.3%, 25% and 8.3%, and 21.7% and 11.7% respectively. For VMI and GAC these proportions were 25% and 8.3%, and 35% and 13.3%. There were few predictors of outcomes: for FSIQ, grade-IV encephalopathy [effect size -15, 95%CI -29,-1; p=0.03]; PIQ, grade-IV encephalopathy [effect size -16, 95%CI -31, -1; p=0.04], VIQ, grade-IV encephalopathy [effect size -17, 95%CI -31, -4; p=0.01], living-related donor [effect size 10, 95%CI 2, 18; p=0.02], and rejection in first 30d [effect size 9, 95%CI 0.5, 17; p=0.04]; and VMI, grade-IV encephalopathy [effect size -20, 95%CI -33, -7; p=0.002], and PELD at activation [effect size 0.5, 95%CI 0.2, 0.9; p=0.006]. Variables not associated with neurocognitive outcomes included: age at transplant, year of transplant, having any severe complication post-operatively, growth failure, and socioeconomic status.

CONCLUSION: Neurocognitive and functional outcomes after liver transplant at age <6 years are shifted to the left of population norms. Severe encephalopathy at transplant predicted a poorer outcome. More research is needed to determine risk factors for the over 3X higher prevalence of scores <70 compared to population norms.

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KINDERGARTEN-AGE QUALITY OF LIFE OUTCOMES AFTER LIVER TRANSPLANTATION AT <6 YEARS

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BACKGROUND: Given the improved mortality after paediatric liver transplantation, health related quality of life (HRQL) is an important outcome measure and provides valuable information for families.

OBJECTIVES: To determine the HRQL of kindergarten-age children who have undergone liver transplantation at age <6 years old.

DESIGN/METHODS: Between 1999–2014, all paediatric liver transplant recipients at our center were enrolled in this ethics board approved, longitudinal inception-cohort study. Following informed consent, HRQL was measured using the parent completed Pediatric Quality of Life Inventory, version 4.0 (PedsQL). The association between pre-transplant, transplant, and post-transplant variables and HRQL was examined using multiple regression analyses. Scores were compared to normative scores for HRQL in 8700 children [total PedsQL 82.2 (15.5), psychosocial summary 81.2 (15.3), and physical summary 84.0 (19.7)] and to scores for 130 children with surgical congenital heart disease from early infancy [81.1 (13.9), 77.5 (16.4), and 86.4 (15.3) respectively].

RESULTS: 78 liver transplants for children <6 years of age were performed; 69 patients (88.5%) survived, and all (100%) were assessed at 55.4 (7.2) months of age: 38 with biliary atresia, 11 with acute liver failure, 11 with cholestasis, and 9 with metabolic disease. The mean total PedsQL was 75.6 (SD=15.6), psychosocial summary 72 (15.9) [a composite of emotional functioning 73.8 (16.4), social functioning 74.6 (19.2), and school functioning 70.6 (19.1)], and physical summary 78.2 (20.9). These composite scores were all statistically significantly different from population norms (p<0.001, <0.001, 0.026 respectively) and surgical congenital heart disease patients (p=0.015, 0.029, 0.005). The proportion having a score >1 (expected 15.9%) and >2 (expected 2.27%) SD