effects of this schools' exercise programme on their students' social skills, scholastic performance and quality of life.

OBJECTIVES: Our objective is to study the effects of a daily physical activity period as part of an educational curriculum on student physical fitness, academic performance and self reported quality of life.

DESIGN/METHODS: We undertook a naturalistic observational study that examined the results of a daily exercise program for Grade 7 students attending École Secondaire E.J. Lajeunesse in Windsor. At this school, all students in Grade 7 and Grade 8 participate in a daily one-and-a-half-hour exercise programme consisting of two different streams: hockey or dance. All Grade 7 students and their families attending the school were asked to participate in our research trial. To study the effects of the exercise programme, student physical fitness, academic performance, and self-rated quality of life were assessed. Specific outcome measures used include: 20 metre sprint test, beep test, squat strength, bench press strength, the Pediatric Quality of Life Inventory, academic grades in mathematics, English and French, and academic learning skills.

RESULTS: Due to difficulties in participant recruitment and retention, only the following results could be analyzed. After one year of the structured hockey exercise program, the participants demonstrated significant increases in sprint speed ($p < 0.0001$), beep test ($p < 0.005$), squat strength ($p < 0.0001$) and bench press strength ($p < 0.0001$). There was also an increase in scores assessing organization, independence, collaboration, initiative and self regulation. An increase was noted in the participant's grades in English and French. Little change was seen in mathematics and science grades.

CONCLUSION: After one year of consistent exercise, study participants demonstrated significant improvements in physical fitness, learning skills and language studies performance. Our results outline multiple benefits of implementing an organized daily physical period as part of the educational curriculum. A follow up to this preliminary study is currently underway to evaluate the effectiveness of school exercise programs on ADHD symptoms.

105

SAFE TRANSITION TO ORAL ANTIBIOTIC THERAPY FOR PYELONEPHRITIS IN CHILDREN UNDER 2 MONTHS OF AGE: A RETROSPECTIVE STUDY

David-Alexandre Lessard, Arnaud Tremblay, Thelma Huard-Girard, Jean-Francois Turcotte

BACKGROUND: Febrile urinary tract infection (UTI) is a common cause of acute illness in paediatric medicine. Whereas oral antibiotic therapy (OAT) has become common practice in older children, the evidence supporting OAT in infants less than 2 months of age is still limited. The need for future research in the management strategies of UTIs in infants < 2 months of age has been acknowledged by the Canadian Paediatric Society.

OBJECTIVES: Describe the use of antibiotics in children < 2 months of age with a diagnosis of pyelonephritis at a Canadian tertiary care paediatric hospital and assess the safety of an early OAT switch in this population.

DESIGN/METHODS: A retrospective observational cohort study of infants < 2 months of age with a diagnosis of pyelonephritis based on 1) fever or systemic symptoms (lethargy, vomiting) and 2) a positive urine culture obtained from urinary catheterization. All children were seen between January 1st 2015 and July 30th 2017 at a single tertiary care centre. Infants were either hospitalized or followed in an outpatient day clinic. Chart review was performed and multiple variables were included in the analysis.

RESULTS: 105 patients were included. Among those, 81 (77%) were boys. Most patients (87%) had *Escherichia coli* infection. Patients presented at a mean age of 33 ± 15 days and were admitted for 3.7 ± 2.7 days. Intravenous antibiotic therapy (IAT) – ampicillin and tobramycin or ampicillin and cefotaxime – were initially used in most patients (96%) with transition to OAT after a mean IAT duration of 3.9 days ± 2.4 days. A renal ultrasound was performed in all patients. In a subgroup of patients aged less than 30 days without bacteremia (44 patients), mean age at presentation was 19 ± 6 days. They were treated with IAT for 3.7 days ± 1.9 days before transition to OAT based on urine culture and resolution of fever. No patient was readmitted for a renal complication following discharge.

CONCLUSION: Early use of OAT following an initial IAT in infants < 2 months of age with a diagnosis of pyelonephritis appears to be a safe option. In infants < 30 days of age without bacteremia, our data suggests that early transition to OAT is not associated with worse outcomes.

106

CHARACTERISTICS OF ANEMIA AND IRON STATUS AND THEIR ASSOCIATIONS WITH BLOOD MANGANESE AND LEAD AMONG CHILDREN AGED FROM 3 TO 19 YEARS OLD FROM FOUR NORTHERN FIRST NATION COMMUNITIES IN QUEBEC

Emad Tahir

[1]Département de la médecine sociale et préventive, Université Laval; Centre de recherche du CHU de Québec – Université Laval; Axes Santé des populations et pratiques optimales en santé

BACKGROUND: Prevalence of anemia and iron deficiency (ID) are higher among indigenous children in Canada, although few data are available in Quebec. Iron is metal that interact with the absorption of manganese (Mn) and Lead (Pb) cobalt (Co). ID is known to upregulate these metals, thereby increasing their absorption, concentration inside the body and their toxicity.

OBJECTIVES: The objectives of the present study are to: (i) Characterize ID and anemia prevalence and their protective/risk factors; and (ii) Study associations between blood Mn, Pb and iron status biomarkers.

DESIGN/METHODS: Data from The 2015 First Nation Youth Health and Environment Pilot Study was conducted among children (3 to 19 y, n = 198) from four First Nations communities in Quebec will be used in these study where, blood samples and anthropometric measures were collected, hemoglobin was measured on site using an Hemocue analyser. Protective/risk factors including education, food security, housing conditions and lifestyle and dietary habits were documented using interview-administered questionnaire to children' parents. Serum ferritin and blood Pb, Mn, Co, Zn and Ca were measured by Modular P analyser and ICPMS. Descriptive and multiple regression statistical analyses adjusting for relevant co-variables were used.

RESULTS: Results showed ID and anemia prevalence of 20.7% and 17.6% respectively, among which 8.8% presented iron deficiency anemia. Moreover, up to 11.9% had elevated blood Mn (median = 15.9 µg/L, range 7.1 to 31.9 µg/L) of which 27.5% presented ID. However, blood Pb was low (median = 5.4 µg/L, range 1.8 to 50.8 µg/L). Multiple logistic regression analysis showed that crystal juice intake was associated with lower ID and anemia (OR (95%): 0.50 (0.30 - 0.82) and 0.47 (0.26 - 0.87) respectively) in girls. Likewise, the presence of hunter in the household was associated with lower anemia in girls (0.09 (0.02 - 0.53)). No factors were associated with ID in boys, and for anemia, lower serum ferritin and older age was associated with higher prevalence of anemia (1.08 (1.01 - 1.14) and 1.23 (1.02 - 1.48) respectively). In adjusted models, blood Mn was negatively associated with serum ferritin concentrations ($ß = -0.05$; $p < 0.02$) in girls and positively associated with blood Co ($ß = 8.50$; $p < 0.01$) in boys.

CONCLUSION: Findings on high prevalence of ID, anemia and elevated blood Mn among children form these First Nation communities support that, community and family activities increasing traditional foods consumption improve nutritional status and suggest that foods and beverages naturally rich in vitamin C - but lower in added sugar than crystal juice - would improve iron intake in girls, which would contribute to improve their iron status, decrease anemia and restore normal Mn blood levels.