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Impact of "micronutrient sprinkles" for the treatment and prevention of iron deficiency in canadian first nations and inuit infants 4-18 months old

A. Christofides, S. Zlotkin, C. Schauer. Departments of Paediatrics and Nutritional Sciences, University of Toronto; The Hospital for Sick Children, Research Institute, Canada.

Iron deficiency (ID) is a concern in First Nation (FN) and Inuit infants. H. Pylori infection may contribute to ID. Standard treatment of anemia in infants is ferrous sulphate (DROPS), however, compliance is universally poor. SPRINKLES containing microencapsulated iron in powder form can be easily added to food without organoleptic changes. **Aim**: To compare DROPS and SPRINKLES for the treatment and prevention of anemia in FN and Inuit infants. **Methods**: A multi-center RCT was performed in Attawapiskat, Fort Albany and Igloolik (total N=94). Anemic infants (Hb?100 g/L) were randomized to DROPS (30 mg Fe/day) or SPRINKLES (60 mg Fe/day) for 3 mo. Non-anemic infants (Hb>100 g/L) were randomized to SPRINKLES (40 mg Fe/day) or placebo for 6 mo. Hb, ferritin (Fn) and soluble transferrin receptor were compared at baseline and end. Associations between variables were examined. **Results**: At baseline, mean Hb was 114.6 g/L±10.1; 13.4% were anemic (Hb?100 g/L); 57% were ID (Fn<12 µg/L). 17.1% were H. Pylori positive; Hb was negatively associated with H. Pylori infection (p=0.01). ID increased with age (p=0.01). Hb was negatively associated with condensed milk consumption (p=0.01). Mean Hb increased by 26 g/L±6.2 in the anemic infants with no difference between interventions. In the non-anemics, hemoglobin levels were maintained with both placebo and SPRINKLES groups and %ID did not increase (p=0.65). **Conclusion**: Anemia is a public health problem in infants in FN and Inuit communities. Sprinkles was as efficacious as drops in treatment.