NAPCRG 52nd Annual Meeting — Abstracts of Completed Research 2024.

Submission Id: 6472

Title

Exploring Iron Deficiency in Alberta: Following up on Clinical Observations

Priority 1 (Research Category)

Population health and epidemiology

Presenters

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Abstract

Context: Iron deficiency (ID) is a common and preventable micronutrient deficiency, affecting cognitive development, immune function, and well-being of individuals, and leading to substantial health care costs.

Objective: Our study investigates ID prevalence in Alberta from 2010 to 2022 and its association with patient and provider characteristics. We hypothesize that the prevalence of ID in Alberta has been increasing over the past decade based on clinical observations and anecdotes. We also explore anemia prevalence to see if results converge as these two health conditions are closely related.

Study Design: Retrospective analysis of electronic medical data obtained from the Canadian Primary Care Research Network, Southern Alberta Primary Care Research Network (SAPCReN-CPCSSN).

Population/Participants: Cohort of 94,264 individuals aged six and older residing in Alberta. These individuals had at least one ferritin test between 2010-2022. ID was defined in accordance with the World Health Organization (WHO) guidelines (i.e., serum ferritin below 15 µg/mL). Additionally, anemia was assessed using WHO guidelines based on hemoglobin levels.

Instrument: Secondary data were extracted from de-identified SAPCReN-CPCSSN electronic medical records.

Outcome/Evaluation: We examined the prevalence of ID over the study period, focusing on trends and correlations to patient and provider demographics. We examined the prevalence of anemia over the same time period.

Results: Contrary to our hypothesis, our findings demonstrated a trend of decreasing ID in Alberta, particularly during the pandemic years (i.e., 2020-2022). Within this overall decline, ID remained higher

among women of reproductive age and individuals with higher material deprivation. Notably, providers who were female and located in urban sites were more likely to perform ferritin testing. Our analysis uncovered a paradoxical trend: while ID is decreasing, anemia is trending upward, underscoring the need to better understand ID and its implications.

Conclusions: The decreasing trend in ID prevalence is encouraging; however, ID remains high among vulnerable populations, which highlights the importance of targeted interventions to address ID effectively. Further investigation is needed to better understand the underlying factors that contribute to our paradoxical finding, which also underscores the importance of assessing multiple clinical indicators to understand patients' full experiences.