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Prevalence of Iron Deficiency in Patients with Inherited Bleeding Disorders

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Children's Mercy Kansas City

Objective

- Identify the **prevalence** of iron deficiency in children with an **inherited bleeding disorder**

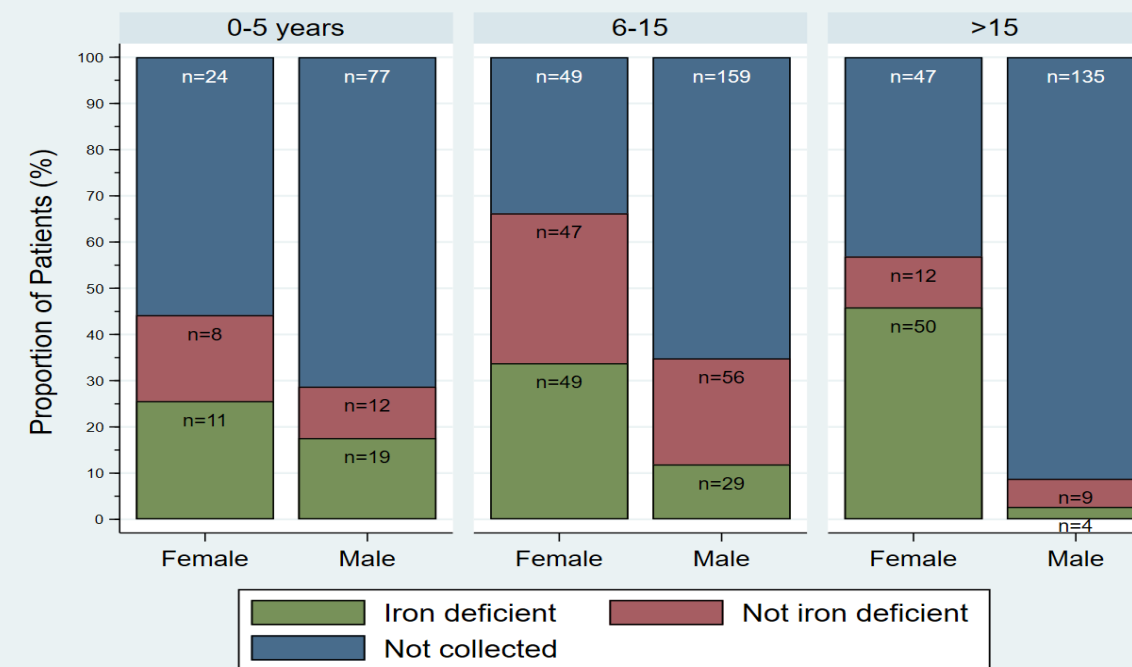
Background

- **Iron deficiency** is an important but frequently overlooked problem in children with **inherited bleeding disorders**
- **Chronic blood loss** commonly leads to iron deficiency and anemia
- Children with bleeding disorders have a **greater propensity for blood loss** and therefore **may have a higher prevalence of iron deficiency** compared to the general pediatric population
- **Few studies** have assessed the prevalence of iron deficiency in children with **inherited bleeding disorders**
- Prior epidemiologic analysis of iron deficiency **is primarily focused on adolescent females**

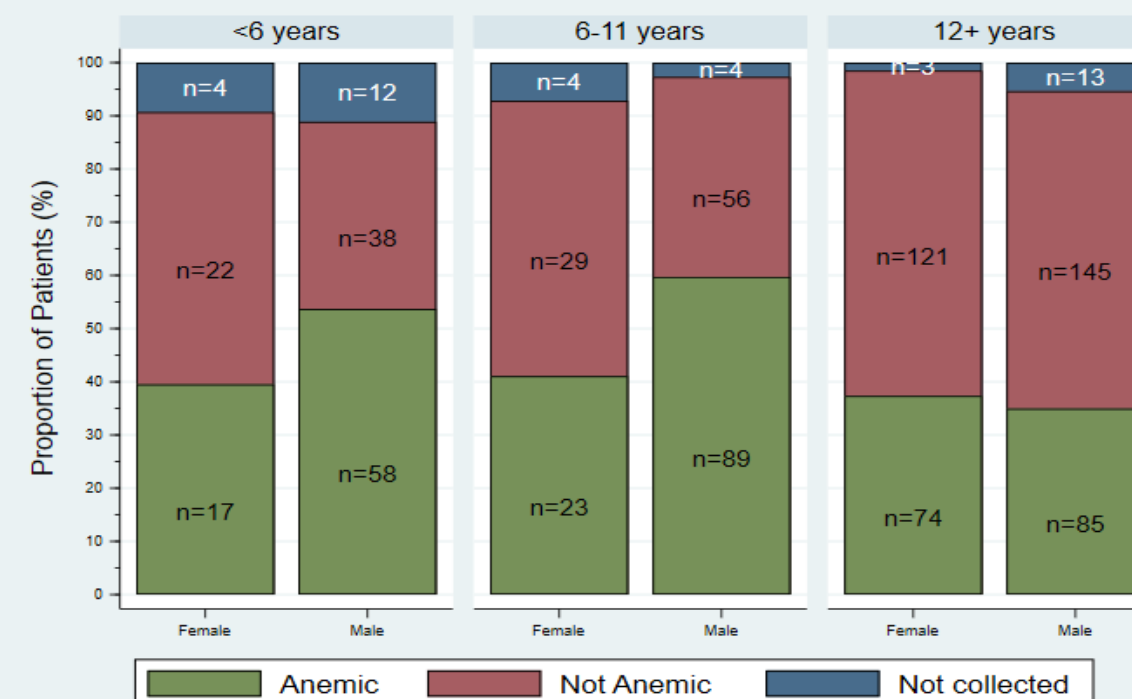
Methods

- We performed a **retrospective analysis** of children with any inherited bleeding disorder seen at Children's Mercy Hemophilia Treatment Center between 2010 and 2020
- **Iron deficiency defined** using recently updated ferritin thresholds outlined by the **National Health and Nutrition Examination Surveys**
- Children were categorized as iron deficient if ferritin was below threshold at any visit during the reviewed time period
- **Lowest hemoglobin** and concomitant **iron deficiency risk factors** were included in the analysis

Proportion of bleeding disorder patients with iron deficiency stratified by age and sex



Proportion of bleeding disorder patients with anemia stratified by age and sex



Results

- **798** children with inherited bleeding disorders were included in this analysis
- **20%** of children included in this study were iron deficient
 - Most iron deficient children were **female (68%)** and aged **6 to 15 years (48%)**
 - Only **26%** of males had ferritin levels measured and **10%** of males were identified as iron deficient
- **43%** of patients were **anemic** at one point during the reviewed time period
 - **46%** of males were found to be anemic
- Only **6%** of iron deficient patients had **other iron deficiency risk factors**
 - The most common concomitant iron deficiency risk factors were inflammatory bowel disease and nutritional deficiency

Conclusion

- Iron deficiency is **more prevalent** in this cohort of **children with inherited bleeding disorders** compared to the **10% prevalence** in the **general pediatric population**
- The **high prevalence of anemia in males** with inherited bleeding disorders suggests they are at comparable risk for iron deficiency
- Considering **74% of males did not have a ferritin level collected**, it is possible that the **prevalence of iron deficiency in males is higher** than this report suggests