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Anaemia and iron deficiency in children with Inflammatory Bowel Disease

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Anaemia is common in patients with Inflammatory Bowel Disease (IBD). Reported prevalence in paediatric cohorts ranges from 40% to 75%. Anaemia is commonly attributed to either chronic disease or iron deficiency. However published data on iron deficiency in children with IBD is scarce.

Electronic records of children recruited to studies of nutrition in IBD were examined retrospectively. Children diagnosed following the Porto criteria were recruited from the regional paediatric IBD service. Children with haemoglobinopathies were excluded. Blood results from diagnosis, and at follow up one and two years later were recorded. Anaemia was defined using WHO standards. Iron deficiency was recorded using a transferrin saturation of <16% and by serum ferritin. In the presence of a CRP <10 mg/l a serum ferritin of <30 µg/l was defined as iron deficiency; in patients with a CRP ≥10 mg/l iron deficiency was defined by a serum ferritin of <100 µg/l.

46 children had Crohn's disease, 17 female, median (25th, 75th percentile) age 12.8 (10.9, 14.7) years. 34 children had Ulcerative Colitis, 18 female, median age 11.6 (8.7, 14.5) years. Prevalence of anaemia is shown in the figure below:

	Diagnosis	Year 1	Year 2
Crohn's Disease	34/46 (74%)	18/43 (42%)	8/19 (42%)
Ulcerative Colitis	25/34 (74%)	13/32 (41%)	7/22 (32%)

In children with Crohn's disease a transferrin saturation of <16% was present in 93% (25 of 27), 67% (24 of 36) and 68% (13/19) of children at diagnosis, 1 and 2 years respectively. Using serum ferritin values corrected for inflammation, 88% (28 of 32), 86% (32 of 37) and 79% (15 of 19) were iron deficient at diagnosis, 1 and 2 years respectively. In children with Ulcerative Colitis a transferrin saturation of <16% was present in 74% (14 of 19), 52% (14 of 27) and 16% (3 of 19) of children at diagnosis, 1 and 2 years respectively. Using serum ferritin values corrected for inflammation, 95% (19 of 20), 81% (22 of 27) and 65% (11 of 17) were iron deficient at diagnosis, 1 and 2 years respectively. Of the 80 children studied, complete data (concurrent Haemoglobin, CRP, ferritin and transferrin saturation) at each time point was available in only four children with Crohn's and five with Ulcerative Colitis.

Anaemia is common in children with Inflammatory Bowel Disease and 30% to 40% of children remain anaemic up to 2 years following diagnosis. Iron status is checked in only selected cases, however prevalence of iron deficiency appears higher and persists for longer in children with Crohn's, compared to those with Ulcerative Colitis.