

ANEMIA AND CROHN'S DISEASE

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INTRODUCTION

Anemia is the most frequent complication during Crohn's Disease (CD) and has a negative impact on patient's quality of life. Its physiopathological mechanisms are multiple and could be linked to the disease itself or to special drug or surgical treatment

This study was aimed to determine the prevalence and mechanisms of anemia and its associated factors in patients with CD.

PATIENTS AND METHODS

This was a retrospective study, involving 59 patients with CD. Anemia was defined as a hemoglobin level < 12 g/dl in women and < 13 g/dl in men. Iron deficiency anemia was defined as ferritin level <13 ng/ml in women and <30 ng/ml in men. Megaloblastic anemia was defined as MCV >97 fl, associated with vitamin B12 deficiency (<141 pmol/l) and/or folate deficiency (<4 ng/ml).

RESULTS

Table 1 summarizes the main clinical and demographic characteristics of our patients.

The main biological data are presented in table 2.

Anemia was observed in **72.9%** of patients. Normochromic normocytic anemia (NNA) was noted in 28.8% of cases, hypochromic microcytic anemia (HMA) in 22% and macrocytic anemia (MA) in 3.4% of patients. Figure 1

Folate deficiency was noted in 5.1% of patients and vitamin B12 deficiency was observed in 25.4%.

Table 2: main biological data of patients

Parameter	Result
- Iron ($\mu\text{mol/l}$)	7,66 \pm 4,42
- Ferritin (ng/ml)	23,29 (8 – 45,4)
- Folate (ng/ml)	7,79 \pm 2,65
- Vitamin B12 (pmol/l)	186 (140,8 – 263,9)
- Hb (g/dl)	11,47 \pm 1,93
- MCV (fl)	84,19 \pm 8,2
- MCH (pg)	26,68 \pm 3,56
- Ht (%)	36,19 \pm 5
- CRP (mg/l)	6 (3 – 35)
- ESR (mm)	40 (14 – 70)

the results are expressed as mean \pm SD or median (25th - 75th percentile)

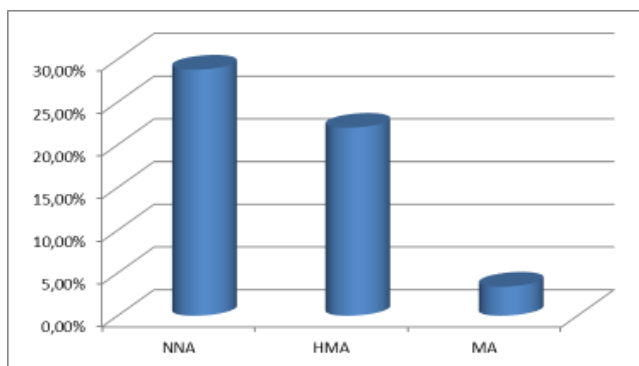


Figure 1: different types of anemia in CD

Anemia was significantly associated with active chronic evolution of the disease ($p=0.023$), CRP level ($p<0.000$), ESR ($p=0.036$) and BMI ($p=0.026$).

Mixed anemia was associated with disease activity ($p=0.009$), hospitalization ($p=0.007$), CRP, platelets and α_2 globulin levels ($p=0.004$, $p=0.03$, $p=0.004$),

No significant association was found between anemia and the location of the disease, the current treatment or the history of surgery.

Table 1: main clinical characteristics of patients

Variable	
Age (years)	36.52 \pm 13.4
Gender (Masculine/Feminine)	29/30
Smoking (%)	18.6
BMI (Kg/m ²)	23.16 \pm 5.18
Illness duration (months)	36 (12-84)
Active disease/remission (%)	44.1/55.9
Location of the disease%:	
- ileo-colonic	35.9
- colonic	47.8
- ileal	16.3
Patient: hospitalized/ outpatient (%)	57.6 / 42.4
Current Treatment (%):	
- corticosteroids	28.8
- immunosuppressants	37.3
- 5-aminosalicylated acid	15.3
CDAI (Best index)	244.5 \pm 69.9
history of intestinal resection (%)	
- grelic resection	15,3
- ileocecal resection	13,6
- partial colectomy	5,1
- total colectomy	5,1

Iron deficiency anemia was detected in 40,7% of cases. The combination of two mechanisms (iron deficiency and anemia of chronic disease) was noted in 35,6% of patients. Megaloblastic anemia was observed in one patient with vitamin B12 deficiency, Figure 2,

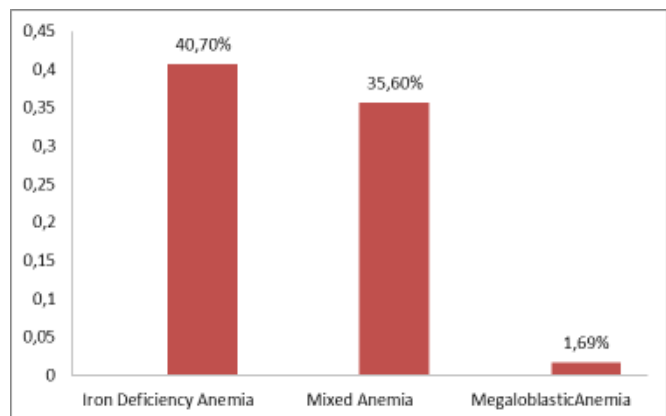


Figure 2: different mechanisms of anemia in CD

CONCLUSION

Anemia is a common complication during CD and should be investigated systematically in all patients. An understanding of its physiopathology is essential for an effective care to improve the well-being and quality of life of patients.