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MEGALOBlastic ANEMIA

INTRODUCTION

Megaloblastic anemia is characterized by red blood cells that are larger than normal. There also aren't enough of them. It's known as vitamin B-12 or folate deficiency anemia, or macrocytic anemia, as well. Megaloblastic anemia is caused when red blood cells aren't produced properly.

Megaloblast is a large, abnormally developed RBC due to deficiency of folic acid or vitamin B12 in the Bone marrow.

Megaloblastic anemia is an anemia that results from inhibition of DNA synthesis during red blood cell production.

Megaloblastic anemia is a Classification of macrocytic anemia. It is characterised by peripheral blood smear showing hypersegmented neutrophils and macrocytosis.

ETIOLOGY

Vitamin B12 deficiency

- Achlorhydria
- Deficient intake
- Deficient intrinsic factor
- Celiac disease

Folate deficiency

- Alcohol
- Deficient intake
- Increased demand
- Malabsorption

PATHOPHYSIOLOGY

Deficiency of vitamin B12 or folic acid

Leads to inhibition of DNA synthesis during RBC production

When DNA synthesis is impaired, the cells cannot progress from growth stage to mitosis stage

Which means there is no cell proliferation

This leads to continuous cell growth without division, which present as macrocytosis.

Thereby, unbalanced cell proliferation leads to decreased number of red blood cell production in bone marrow.

DIAGNOSIS

The gold standard is: decreased level of vitamin B12 in blood.

Decreased red blood cell count.

Decreased Haemoglobin level

Increased mean corpuscular volume (MCV).