1: J Lab Clin Med 2001 Sep;138(3):164-76 Related Articles, NEW **Books**, LinkO

J Lab Clin Med

Relevance of folate metabolism in the pathogenesis of colorectal cancer.

Ryan BM, Weir DG.

Department of Clinical Medicine, St James's Hospital and Trinity College, Dublin, Ireland.

The purpose of this review is to outline the principal mechanisms involved ir folate metabolism and how they may relate to the pathogenesis of colorectal cancer (CRC). In recent years, mild folate depletion (low normal level) has been associated with an increased risk of developing certain cancers, in particular colorectal neoplasia. The epidemiologic and mechanistic evidence linking folate deficiency with carcinogenesis is reviewed, with a particular emphasis on colorectal neoplasia. Methylenetetrahydrofolate reductase (MTHFR) is a critical folate metabolizing enzyme, and a functional polymorphic variant of this enzyme, the so-called thermolabile variant, caused by a C677T transition in the MTHFR gene, is common in the general population. This review critically examines the evidence that suggests that carriers of this C677T variant may be at increased risk of developing colorectal neoplasia. Although folate depletion may predispose to the initiation of the neoplastic process, folate supplementation, on the other hand might potentiate the progression of an already established early neoplastic clone (eg, a colorectal adenoma). This could have potential public health implications, given an increasingly widespread policy of folate supplementation of food staples.

Publication Types:
- Review
- Review, Academic

PMID: 11528369 [PubMed - indexed for MEDLINE]