

EVIDENCE OF A FREE RADICALS-MEDIATED MECHANISM IN CYANOCOBALAMIN ABSORPTION FAILURE IN ALCOHOLICS: EFFECT OF A NOVEL ANTIOXIDANT ORAL SUPPLEMENTATION.

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Alcohol administration in healthy volunteers decreases vitamin B₁₂ absorption and some reports suggest that chronic alcoholics may have a reduced serum level of this vitamin. However, to date there is only one in vitro study investigating on the mechanisms of such abnormality which suggested a role of ethanol-generated free radicals. Thus, the aim of this study was to test a novel antioxidant on vitamin B₁₂ absorption in a population of alcoholic chronic liver disease (CLD) patients. Thirty patients with alcoholic CLD (>150g ethanol/day for at least 5 years) and twenty-four teetotaler patients underwent baseline blood chemistry and Dual Isotope Schilling test (DIST). During endoscopy, biopsy samples were taken from gastric antrum and body to assay: routine histology, malondialdehyde (MDA), vitamin E and glutathione concentration and for testing vitamin B₁₂-Intrinsic Factor binding. Examinations were repeated after one week supplementation with Bionormalizer 9g/day, a novel antioxidant biofermented by yeast from medicinal plants (Carica Papaya, pennisetum purpureum, Sechium edule, Osato Research Foundation, Gifu, Japan). Plasma MDA level and lipid hydroperoxides concentration as well as MDA and xanthine oxidase concentration in the gastric mucosa in CLD patients were significantly higher than in controls ($p < 0.01$) and despite unchanged alcohol consumption, significantly decreased after Bionormalizer supplementation ($p < 0.05$). Gastric mucosal glutathione was markedly depressed in CLD patients and partly recovered after Bionormalizer ($p < 0.05$ vs baseline). Although the CLD patients showed normal Intrinsic Factor secretion in the gastric juice, they exhibited a markedly depressed Intrinsic Factor-cobalamin binding on the ex vivo study ($p < 0.001$). Moreover, nearly 23% of them had an abnormal DIST. Both these impairments reverted to normal after Bionormalizer ($p < 0.01$ vs baseline). It can be postulated that the antioxidative action played by Bionormalizer, possibly due to its availability of substrates for glutathione synthesis as well as to its effect on local oxidative burst from neutrophils, is able to recover a normal cobalamin absorption.