sponse validates not only the diagnosis, but also the treatment, which is otherwise safe and inexpensive.

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Emmanuel Andrès and colleagues[1] state that the classic treatment for deficiency of vitamin B_{12} is injections of crystalline vitamin B_{12} and that an oral treatment has "recently" been devised. However, oral treatment of pernicious anemia was described in 1926 by George Minot and William Murphy.[2] Indeed, in 1934, they (along with George Whipple) received the Nobel Prize for this work. Not until 1948 did Karl Folkers and his coworkers at Merck succeed in purifying crystalline vitamin B_{12}.[3]

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In a recent review, Emmanuel Andrès and colleagues[1] recommend parenteral or oral administration of cobalamin as the treatment of choice for food-cobalamin malabsorption syndrome. The authors mention hypochlorhydria as a factor in this problem but do not recommend hydrochloric acid (HCl) and pepsin therapy as a potential treatment.

In a study of 5 patients with hypochlorhydria, all of the patients had decreased urinary excretion of protein-bound cobalamin.[2] After receiving supplemental HCl, pepsin, gastric intrinsic factor or some combination of these, 4 of the 5 patients showed improvement in protein-bound cobalamin absorption. Another study examined the effect of water, cranberry juice (pH 2.5–2.6) or a 0.1N HCl solution (pH 1.2) on the absorption of protein-bound cobalamin in 3 groups of elderly subjects: healthy individuals, subjects pretreated with omeprazole to simulate the hypochlorhydria of atrophic gastritis and patients with diagnosed atrophic gastritis.[3] Administration of diluted HCl increased the absorption of protein-bound cobalamin in all 3 groups, and this difference was statistically significant for both the omeprazole-treated and healthy subjects ($p < 0.001$). The authors noted that this improvement might have been the result of the acid's ability to augment the release of cobalamin from protein.

Maintaining adequate gastric pH ensures a sufficient sterilizing barrier against enteric pathogens, allows for proper absorption of micronutrients, preserves normal intestinal permeability and prevents hypergastrinemia.[4,5] High gastric pH (as occurs in atrophic gastritis) is also associated with the development of gastric malignant tumours;[6] therefore, maintaining adequate gastric pH might be a preventive measure. Supplemental HCl has been shown to reduce (acidify) gastric pH in subjects with simulated hypochlorhydria.[7] The method of administration has been described by several investigators.[5,8-10] Patients usually start with one 5- to 10-grain (325- to 650-mg) capsule of betaine or glutamic acid hydrochloride with each meal; pepsin is sometimes added to these capsules to improve absorption. Patients are instructed to increase the dosage by one 5- to 10-grain capsule with each meal, sometimes working up to 60–80 grains with every meal. Patients are advised against this therapy if they are also receiving nonsteroidal anti-inflammatory medications or corticosteroids, if they have active peptic ulcer disease, if they have abdominal pain, or if they experience abdominal pain or burning with this treatment. Patients are also instructed to use fewer capsules with smaller meals and more capsules at larger meals.

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