

## LETTER TO THE EDITORS

### CAN THE GAMMA-GLUTAMYL TRANSPEPTIDASE ISOFORMS REALLY BE UTILIZED IN THE DIAGNOSIS OF ALCOHOLIC LIVER DISEASE?

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We read with great interest the paper by Bellini *et al.* (1997) regarding the usefulness of serum  $\gamma$ -glutamyl transpeptidase isoforms (iso-GGT) in detecting alcoholic liver disease. The authors performed the separation of iso-GGT in sera from alcoholic patients (six affected by liver cirrhosis and 14 by fatty liver), compared to healthy and non-alcoholic liver disease-affected subjects (these latter included 43 patients with chronic hepatitis C, 36 patients with post-hepatic cirrhosis and 52 epileptic patients). Since significant differences were found in iso-GGT among alcoholics and healthy subjects and patients with non-alcoholic liver disease, the authors proposed the iso-GGT fractionation as a complementary test in the diagnosis of alcoholic liver disease because of its high sensitivity.

Our previous results (Stefanini *et al.*, 1993), quoted by the above authors, were similar as regards sensitivity, but we have some concern about specificity. In fact, in a further study, we performed the separation of iso-GGT in both alcoholic patients, diagnosed according to DSM-III criteria (three affected by cirrhosis and 31 by fatty liver) and subjects working in laundries and professionally exposed to perchloroethylene (PCE), and compared these to healthy social drinkers, with the aim of verifying the sensitivity of iso-GGT as a marker of alcohol abuse. The PCE exposure was evaluated by analysis of trichloro-

acetic (TCA) acid in the urine collected at the end of five consecutive days of working exposure, using the Grisler methods (Gennari and Raffi, 1992). Although significant differences between alcoholics and healthy subjects were found in iso-GGT, a similar electrophoretic pattern was found in both alcoholics and workers exposed to PCE (unpublished data).

Our data, together with the Bellini *et al.* (1997) observation that no differences in iso-GGT were observed between the alcohol-addicted and epileptic patients who had received treatment with phenobarbital and/or carbamazepine and/or phenytoin and/or sodium valproate for 3 months or less, suggest that iso-GGT pattern is probably due to the inductive action of alcohol and/or other agents such as drugs and pollutants. These observations raise some doubts on the specificity of iso-GGT determination. This possibility, together with the high costs of the test, limit its utility as a general marker in alcoholic liver disease.

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## REPLY

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We thank Dr Stefanini and co-workers for their comment on our article. We partially agree with their observations. In our experience,  $\gamma$ -glutamyl-transpeptidase isoform separation showed a good accuracy in differentiating enzymatic induction from liver damage. The estimated cost of the test, about \$10.00, is not so high if the test is performed

on well-selected patients. Undoubtedly, we propose the separation of the multiple forms of  $\gamma$ -glutamyl-transpeptidase on agarose gel only as a complementary test in the differential diagnosis of liver disease along with the other well-known parameters of alcohol abuse. The possible application of mathematical models in order to perform a morphological analysis of the electrophoretic patterns will improve the specificity of the method.

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