References


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Bilirubin and Risk of Coronary Artery Disease

To the Editor:

Schwertner et al. (1), suggesting an association of low serum concentration of bilirubin with increased risk of coronary artery disease, were careful to recognize that their study did not include women, who have lower mean serum bilirubin concentrations than men (2). It would have been interesting for the authors to indicate the percentage of subjects in each of the categories of coronary artery disease who had Gilbert syndrome—an inherited chronic mild unconjugated hyperbilirubinemia associated with impaired hepatic pigment clearance in the absence of structural or functional liver disease. Population studies indicate that Gilbert syndrome occurs in about 3-7% of the adult population, with a higher incidence in men than in women (3). Of the 877 aircrew members included in the study, one would expect 26-61 (3-7%) to have Gilbert syndrome. If indeed a low serum bilirubin concentration is associated with an increased risk of coronary artery disease, then airmen with Gilbert syndrome might be more likely to be in the low-risk coronary artery disease group. As Schwertner et al. indicated, it is unknown whether increased serum bilirubin prevents coronary artery disease. If there is an association of low serum concentration of bilirubin with increased risk of coronary artery disease, is there an association of increased serum bilirubin concentration with a decreased risk of coronary artery disease? Further studies are needed.

References


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An author of the article referred to responds:

To the Editor:

Because unconjugated bilirubin concentrations were not measured in our study (1), we are not able to provide information on coronary artery disease risk in patients with Gilbert syndrome. Rosenthal's ideas, however, is a good one. We, too, have been interested in this subject and have been performing these studies in a different population. The studies, though, have not yet been completed. Bilirubin concentrations are also affected by several other diseases (2), by the chronic administration of drugs (3), and by sex and racial differences (4). The prevalence of coronary artery disease in these conditions needs to be examined and might improve our understanding of the bilirubin coronary artery disease relation.

References


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Eliminating Bilirubin Interference in Cobas MIRA Assay of Creatinine in Serum

To the Editor:

The negative interference from high concentrations of bilirubin in the Jaffé kinetic reaction for creatinine determination is well documented. We have observed this phenomenon on the Cobas MIRA Plus analyzer (F. Hoffmann-La Roche, Basle, Switzerland). Recent approaches to eliminate bilirubin interference in the Jaffé reaction for serum creatinine have included online treatment of samples with peroxidase (1) and pretreatment of icteric samples with bilirubin oxidase (2) or with ferrocyanide (3). These modifications showed good results for bilirubin concentrations <600 μmol/L. These methods are especially interesting for use with analyzers that lack the capability of carrying out rate protocols, but all are tedious and involve the need for additional reagents.

The use of a blank rate method was proposed to eliminate bilirubin interference on the Hitachi 737 and 736 analyzers (4, 5). Owens and Lewis (6) proposed the use of a "twin-test" procedure for some other models of Hitachi analyzers. The software of all versions of Cobas MIRA analyzers allows the use of two calculation steps whereby the rate of the negative reaction is automatically subtracted from the main reaction rate—a procedure that can simplify the blank rate method. For creatinine determinations with the Cobas MIRA Plus analyzer, we used two modifications of the Jaffé kinetic reaction, applied to two reagent systems that are used for routine assays in many laboratories.

Total bilirubin was assayed with Cobas MIRA Plus instrument by the Jendrassik-Grof method described in the test instructions with reagent from F. Hoffmann-La Roche.

In the first modification of the Jaffé kinetic reaction (method A), we prepared the program for the Cobas MIRA Plus analyzer (Table 1, A) for creatinine kit cat. no. 816426 (Boeh-