herence interval from pretherapy baseline concentrations. The mean ± SD decrease was 46% ± 14% (range, 25–64%). As shown in Fig. 1, individual values remained within the reference interval over 5 nonconsecutive days. This suggests that information of bone status provided by DPD during antiresorptive therapy is consistent even when the highest CV value reached 15%.

In conclusion, we observed—in a short-term study—a lower day-to-day variation of DPD during antiresorptive therapy than those reported for untreated individuals. This suggests that DPD measurements could provide useful clinical information in the individual patient to appropriate interpretation of bone status and antiresorptive treatment effects. Moreover, these observations point out the need for additional long-term studies to confirm the clinical utility of DPD measurements in patients under antiresorptive therapy.

References

Erich E. Fradinger*
Gerardo Rodriguez
Cesar Bogado
Jose R. Zanchetta
Instituto de Investigaciones Metabolicas
Libertad 836 1er piso
(1012) Buenos Aires
Argentina

*Author for correspondence. Fax 54 1 816-1495; e-mail efradinger@idim.com.ar.

Association between Chronic Hepatitis C Virus Infection and Increased Neopterin Concentrations in Blood Donations

To the Editor:
In Austria, additional nonspecific screening of blood donations for immune system activation has been mandatory since 1993 for early detection of especially acute virus infections. For this purpose, measurement of neopterin concentrations is performed nationwide, allowing detection of cell-mediated immune reactions with great sensitivity (1). Earlier studies demonstrated in blood donors who already had passed the physical examination before donation and who already had donated blood that subclinical acute infections with certain viruses were more likely to be detectable serologically in donations with increased neopterin concentrations compared with donations with lower neopterin concentrations: Acute cytomegalovirus (CMV) infections examined by CMV-IgM antibody testing were found to be 17-fold more likely in donors with increased neopterin (2). In cases of Epstein-Barr virus (EBV) and parvovirus B19, the discrepancy between donor groups with low and high neopterin concentrations was smaller but still significant (EBV: 2.9-fold, P = 0.002; parvovirus B19: 3.3-fold, P < 0.001) (3).

In this study, we compared hepatitis C virus (HCV) status in blood donations with increased (>10 nmol/L) and reference value neopterin concentrations. We retrospectively investigated 54 402 donations (all donations at the Central Institute of Blood Transfusion in Innsbruck in 1996) that were screened for HCV antibodies, hepatitis B surface antigen, HIV-1 and -2 antibodies, Trepomonas pallidium (hemagglutinin assay, TPHA), liver enzyme alanine aminotransferase, and serum neopterin (IMMUtest, BRAHMS-Diagnostica), as regulated by the Austrian Guidelines for Transfusion Medicine. HCV antibodies were tested by ELISA (Ortho HCV 3.0 ELISA test system, Ortho Diagnostics), and positive results...
were confirmed by a recombinant immunoblot assay (Chiron RIBA HCV 3.0 SIA, Chiron Corporation). Additional testing for viral RNA in confirmed HCV antibody-positive samples was performed by a commercially available PCR test kit (Amplicor HCV monitor, Hoffmann-La Roche AG).

HCV antibody positivity was detected in 328 (0.60%) donors (all negative for HIV antibody, hepatitis B surface antigen, and TPHA); 39 (0.072% of all donations) were positive in the RIBA assay, and 19 (0.035% of all donations) were reactive with PCR. Among the 4251 donations with increased neopterin (>10 nmol/L), 44 of 328 were HCV antibody seropositive (odds ratio = 1.83, \( \chi^2 = 14.37, P < 0.001 \)), 8 of 39 were RIBA positive (odds ratio = 3.04, \( \chi^2 = 8.74, P = 0.003 \)), and 7 of 19 were HCV PCR positive (odds ratio = 6.88, \( \chi^2 = 22.11, P < 0.001 \)). Similarly, 7 of 44 HCV antibody-positive donations with increased neopterin were positive by PCR; this was true for only 12 of 284 HCV antibody-positive donations with neopterin within reference values (odds ratio = 3.76, \( \chi^2 = 9.53, P = 0.002 \)). We conclude that there is a significant association between increased neopterin concentrations and a positive PCR result in the HCV antibody-seropositive donations.

From the data it becomes obvious that not only acute and symptomatic HCV infections are associated with increased serum neopterin values, as could have been expected from earlier studies (4,5), but also that the frequency of asymptomatic chronic HCV carriers with RNA positivity as a sign for infectivity was approximately sevenfold higher in donors with increased concentrations of neopterin compared with those with concentrations within reference values. The data of this study further demonstrate that neopterin screening of blood donations contributes to reduce infectious risk of transfusion. In cases of HCV this is of limited relevance because antibody testing has been introduced, although some HCV antibody seronegative infections will certainly exist. The residual value of neopterin screening to further reduce HCV transmission by transfusion cannot be deduced from this study. For ethical reasons, it is impossible to transfuse blood donations with increased neopterin concentrations in Austria. Therefore, the benefit of additional neopterin screening of blood donations cannot be demonstrated by comparing the outcome of recipients; evaluation is only possible in a retrospective way when new specific tests become available. Our study further supports the view that increased neopterin concentrations in seronegative blood donations may be a marker for other currently unknown infections or infections not screened for and that transmission of these infections maybe reduced if they are transmissible by blood transfusion.

Diurnal Variability and in Vitro Stability of Carbohydrate-deficient Transferrin

To the Editor:

Transferrin isoforms with pl values \( \geq 5.7 \), known as carbohydrate-deficient transferrin (CDT), are present in increased concentrations in the serum of patients with current alcohol abuse. CDT has been found to be a specific and sensitive marker for detection and monitoring of high and continual alcohol consumption (1). The clinical performance of CDT has been studied using various techniques for analysis but also using various conditions for serum sample collection and storage. The biological (non-alcohol-influenced) variation over time has been found to be low (2). We have studied the diurnal variability of CDT and the effect of sample storage conditions in the commercial CDTect assays.

Blood was collected by venipuncture and allowed to clot at room temperature. The serum samples were separated by centrifugation, and 1-mL portions were aliquoted into polypropylene tubes (Sarstedt). CDT was measured by duplicate determinations in CDTect\textsuperscript{®} RIA or CDTect EIA (Pharmacia & Upjohn Diagnostics AB). Results are expressed as units per liter. In an evaluation performed on 76 serum samples the assays gave comparable results and showed good correlation, with a correlation coefficient of 0.99 and a regression line of EIA = 0.46 + 0.90 × RIA. The within-assay and between-assay coefficients of variation for the RIA were 7.2% and 9.3%, respectively; for the EIA, they were 6.5% and 9.3%, respectively.

To study the diurnal variation, we...