
The concentration of phospholipids in serum is seldom measured for clinical purposes, but its measurement may be useful for the study of several dyslipemias such as Tangier disease or abetalipoproteinemia (1).

As far as we know, no data have been published on the biological variation of the serum concentration of phospholipids. Here we present data on the intra- and interindividual biological variation of this quantity.

Blood was collected from 20 healthy women (ages 22–49 years) and 22 healthy men (ages 20–45 years) once a month for 13 months; serum samples were stored at −20 °C until analysis. The serum concentration of phospholipids was measured in a Hitachi 717 analyzer with an enzymatic method (no. 691844; Boehringer Mannheim, Mannheim, F.R.G.) in 13 different runs (one per month of blood collection). Additionally we included in each run a control material with a "physiological" concentration of phospholipids, and used these results to estimate the between-run methodological variance (\(\sigma_{\text{mr}}^2\)) and coefficient of variation (\(CV_{\text{mr}}\)). The interindividual biological variation was estimated as the coefficient of variation (\(CV_{\text{mr}}\)) of the "homeostatic values" of all volunteers (results for men and women were pooled because no significant difference was observed between their means or between their variances).

For each volunteer, the overall (total) intra-individual variance (\(\sigma_{\text{iv}}^2\)) was estimated from their 13 results; the intra-individual biological variance (\(\sigma_{\text{biv}}^2\)) was estimated as follows: \(\sigma_{\text{biv}}^2 = \sigma_{\text{iv}}^2 - \sigma_{\text{mr}}^2\). The biological intra-individual coefficients of variation with respect to the homeostatic values (\(CV_{\text{iv}}\)) were also calculated. The mean and median \(CV_{\text{iv}}\) values were estimated after demonstrating that no significant differences existed between men and women with respect to these coefficients of variation.

The coefficients of variation (and the corresponding means) obtained are \(CV_{\text{mr}} = 1.6% (\bar{X} = 2.7 \text{ mmol/L})\), \(CV_{\text{iv}}\) (mean) = 6.9%, \(CV_{\text{biv}}\) (median) = 6.5%, \(CV_{\text{biv}} = 11.1% (\bar{X} = 3.1 \text{ mmol/L})\). From these data, the analytical goal for imprecision, i.e., \(\frac{1}{2}CV_{\text{iv}}\) (2), is 3.4% (or 3.2% if the median \(CV_{\text{iv}}\) is used). Other applications of the biological variation data, such as the calculation of the index of indi-

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d_c = 2.77 \times \text{median of } \sigma_{\text{tw}} = 0.6 \text{ mmol/L}
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II = \text{median of } \frac{\delta_{\text{tw}}}{\delta_{\text{tw}}^{\text{SB}}} = 0.69
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So, in this case, for diagnostic purposes, comparison by using the population reference limits is not advisable because the individuality index is near the 0.6 value (4).

References

Concentrations of \(N\)-Acetyl-\(\beta\)-d-glucosaminidase and Its Intermediate Isoenzymes in Serum of Patients with Renal Transplants, Frédéric Loko, Daniel Robic, Marie-Thérèse Bondiou, and Richard Bourbouze' (Lab. de Chimie Biol., Faculté de Pharmacie, Univ. Paris V, 4 Ave. de l’Observatoire, 75006 Paris, France; author for correspondence)

Determination of urinary \(N\)-acetyl-\(\beta\)-d-glucosaminidase (NAG; EC 3.2.1.30) excretion has been used extensively to investigate various types of kidney diseases (1, 2). Until recently, however, the serum concentrations of NAG in chronic renal failure were not known. NAG activity in diseased subjects was lower than in healthy controls (3). Now we have compared the activity and molecular forms of NAG in the serum of subjects who had undergone renal transplantation as long as 13 years ago.

Venous blood was allowed to clot and was then centrifuged; sera were frozen at −80 °C until enzymatic determinations. Blood was sampled without any exclusion criteria from 43 renal-transplant recipients who had been treated in the transplant unit (Groupe Hospitalier Pitié-Salpêtrière, Paris). Clinical management was as described previously (4), with prednisolone and azathioprine as immuno-suppressive agents.

We also investigated 23 patients in different stages of chronic renal failure (serum creatinine values >250 \(\mu\)mol/L) from the Department of Nephrology (Groupe Hospitalier Pitié-Salpêtrière). Twelve blood donors from a