Serum Glycoprotein Level as a Possible Early Screening for the Development of Diabetic Retinopathy

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The title of this communication might arouse expectations that, unfortunately enough, cannot be fulfilled by the results of this investigation. The glycoprotein level, the total protein, and the glycoprotein fractions after electrophoretic separation on cellulose acetate were studied as bio-medical parameters for the correlation diabetic retinopathy/serum glyco-proteins. The investigation was limited to these determinations based on the strength of the thought that the screening should be restricted to simple determinations that can be done in any hospital laboratory.

That the glycoproteins are elevated in diabetics has been demonstrated by several investigators. Von Langness and coworkers from the Kiel clinic (Prof. Böke) have also tried, in an extensive study on some 120 patients, to establish a link between the serum glycoprotein level and diabetic retinopathy, this investigation being repeated with the same patients after 4 years. They found a significant correlation between the glycoprotein level and diabetic retinopathy.

153 patients were involved in our study. A retinopathy was found in 63 patients. These patients, as a group, had an elevated glycoprotein level; at the same time the glycoproteins/protein ratio was significantly increased. However, if we divide these patients into two groups, one with raised and one with normal glycoprotein level, we find, in contrast to Von Langness, that there is an equal distribution over these two groups of diabetics with as well as without retinopathy.

Neither does the glycoprotein spectrum lead to an unequivocal conclusion regarding the increase or decrease of a certain fraction and the incidence of diabetic retinopathy. If we only pay attention to deviations in the spectrum, we may conclude from our investigation that 56 % of the Denswil/Huitink/Junge

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diabetics with retinopathy have an abnormal glycoprotein spectrum, as compared with 33 % of the diabetics without retinopathy.

If abnormal results are indicated by + and normal by -, the findings can be represented in a table in which both the glycoproteins/protein ratio and the glycoprotein spectrum are involved in the considerations.

Summarizing, diabetics with retinopathy have a significantly increased serum glycoprotein level, but this is likewise so in diabetics without retinopathy; deviations in the spectrum of glycoproteins are somewhat more frequent in diabetics with retinopathy than in diabetics without retinopathy.