

Monday, July 13, 1981

Poster Presentations

Diabetes – I

11:00–12:30 h

Grand Ballroom Lobby Boards 213–222

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SICKLE CELL TRAIT, DIABETIC RETINOPATHY AND ERYTHROCYTE ADHESION. E. Abadie, M.P. Wautier, Ph. Passa and J.L. Wautier. Department of Endocrinology and Metabolism, Laboratory of Experimental Thrombosis and Haemostasis, Hopital Saint-Louis, Paris, France.

Increased erythrocyte adhesion to endothelial cells has been reported in sickle cell anaemia, and we have found the same phenomenon in diabetes mellitus. In sickle cell disease, increased adherence correlated with the clinical severity of the disease, and in diabetes with the extent of vascular complications. Previous studies have shown that there is no statistical difference in the prevalence of retinopathy between diabetics with and without sickle cell trait (Hb AS). We have had the opportunity to study two patients with diabetes and Hb AS to determine whether the uncommon association of these two conditions potentiates the abnormal erythrocyte adhesion found in diabetes. Both patients were non insulin-dependent diabetics treated by diet. Concentrations of HbS were 53 % (patient 1) and 36 % (patient 2). Severe peripheral proliferative retinopathy (patient 1) and background retinopathy (patient 2) were demonstrated by fluorescein angiography. Adhesion was measured using ^{51}Cr labelled erythrocytes and cultured human endothelial cells. Results were expressed as an adherence ratio (AR), defined by the percentage adhering patients erythrocytes/percentage adhering control erythrocytes. AR was increased in patient 1 (AR : 1.66) and normal in patient 2. The mean AR in 29 diabetics was 2.32 (range 0.8 - 5.2). These results suggest that there is no additional effect of Hb AS on erythrocyte adherence to endothelial cells in diabetes.

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DIABETIC RETINOPATHY AND THROMBOXANE LIKE SUBSTANCE. M.A. Lazzari, M. Gimeno, N.M. Sutton, J.R. Lopez. Departamento de Trombosis, Instituto de Investigaciones Hematológicas, Academia Nacional de Medicina and Centro de Estudios Farmacológicos y de Principios Naturales, CONICET, Buenos Aires, Argentina.

Diabetes Mellitus (DM) is a risk factor in the development of vasculopathies and its complications. It produces also its own microangiopathy. Evidence was reported of increased platelet activity in DM in different assays. Platelets aggregation and the arachidonic cycle could play a key role in the increased tendency to thrombosis. A disorder of ratio $\text{TXA}_2/\text{PGI}_2$, two opposing prostaglandin derivatives, could be the initial step. We intended to evaluate a thromboxane like substance (TLS) produced from platelet rich plasma (PRP) and to compare between normals and diabetic retinopathy (DR) patients. TLS was measured in 16 controls and 16 patients. Assay was done with the aggregating activity developed in PRP (considered TLS) after addition of arachidonic acid (f.c. 2 mM). The supernatant of the PRP (100 μl) was taken 40 sec. after the aggregation started and were added to a normal PRP treated with aspirin (f.c. 40 $\mu\text{l}/\text{ml}$) adjusted to 250.000 - 300.000 $\text{pl}/\mu\text{l}$ and the degree of platelet aggregation measured in a Chrono Log Aggregometer. TLS was inactivated after its incubation during 2 min. at 37°C . This finding suggests this activity is due to TXA_2 .

The results obtained (expressed in % of platelet aggregation) were: controls \bar{x} 16.37% \pm 6.28 and DR \bar{x} 36.00% \pm 9.72.

The increase detected in the DR group supports previous experimental reports suggesting the role of the thromboxane A_2 in vaso occlusive complication of diabetes mellitus.