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Measurement of the Effectiveness of (AHG) Therapy in Hemophilia

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A procedure for measuring the rate of plasma prothrombin activation was employed to assess therapy in Hemophilia A and B. Two preparations of Cohn's plasma fraction I, lyophilized and fresh plasma were studied in 5 adult hemophilia A and 2 adult hemophilia B patients. Prothrombin activity in plasma and serum was measured by the modified two-stage assay of Ware and Seegers. The rate of prothrombin activation was calculated in units/minute. *In vitro* activity was determined by adding the test product to the patient's baseline plasma specimen. *In vivo* activity was evaluated by determining the change of activation rate in specimens obtained before and after I. V. infusion of each product.

All of the preparations evaluated were found to be clinically effective in hemophilia A; however, a variable response was observed with each preparation. Generally fraction I produced a response similar to that of dried plasma. Hemophilia B responded to plasma and did not respond to fraction I preparations. *In vivo* effectiveness of the products could be correlated with *in vitro* results. Increase in activation rate was variable; however, depending upon the initial activation rate and the clinical condition of the patient. The period of demonstrable effectiveness was 3 to 5 hours and correlated with clinical improvement. It is concluded that [1] measurement of the rate of prothrombin activation permits an evaluation of the severity of the disorder, [2] large quantities of factor-rich products are necessary for control of bleeding in hemophilia, and [3] advantages are derived from the use of plasma fraction concentrates.

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