VARIABILITY OF PLATELET FUNCTION RESPONSE TO ASPIRIN. M. Atik, M.D. Drew Postgraduate Medical School, University of California, Los Angeles, California, U.S.A.

To evaluate the effect of aspirin on platelet function, three groups of subjects were studied. Platelet adhesiveness (pl. adh.) was determined by the Hellem glass bead retention method, and platelet aggregation (pl. agg.) by the Born turbidimetric method using standardized collagen of varying concentration. In eight healthy volunteers, the mean pl. adh. decreased insignificantly from $45\% \pm 13$ to $41\% \pm 13$ after 5-7 days of 600 mg/day of aspirin. They showed slight to moderate impairment of platelet aggregation. In 16 patients with massive gastrointestinal bleeding, following ingestion of aspirin, the mean pl. adh. was $22\% \pm 5$ which is significantly lower ($P < 0.01$) than for the normal individuals. These patients showed poor to no platelet aggregation. By contrast in 14 patients with rheumatoid arthritis, despite being on large doses of aspirin, the mean pl. adh. was $61\% \pm 15$ which is significantly higher ($P < 0.05$) than for the non-arthritics. In six of these patients pl. agg. was also measured. They showed no or slight impairment. These observations provide a plausible explanation for the conflicting reports regarding efficacy and complications of aspirin and emphasize the need to differentiate between its anti-inflammatory and antithrombotic effects by actual determination of platelet function in patients treated with aspirin.

INHIBITORY EFFECT OF DIAMINES AND POLYAMINES ON HUMAN PLATELET AGGREGATION AND $[^{14}\text{C}]$ -SEROTONIN RELEASE REACTION. K. Subbarao and F. Forestier*. Temple University School of Medicine, Philadelphia, PA., U.S.A. and *Hopital Notre Dame de Bon Secours, Paris, France.

Physiological diamines and polyamines occur in high concentrations in various parts of animal tissues. These amines are known to interact with and stabilize nucleic acids, membranes and ribosomes (Tabor and Tabor, Pharmac. Rev., 16, 245). The effect of putrescine, cadaverine, spermidine and spermine on platelet function is not yet fully explored. We studied the effect of these reagents on *in vitro* aggregation of human platelet rich plasma (PRP) induced by the addition of ADP, thrombin, collagen and serotonin. Cadaverine, spermidine and spermine at concentrations from 2-5 mM strongly inhibited the aggregation of platelets and the $[^{14}\text{C}]$ -serotonin release reaction induced by ADP and thrombin in a concentration dependent manner, but did not show any effect on aggregation induced by other agents. Putrescine, on the other hand, failed to produce any effect on the aggregation of platelets and $[^{14}\text{C}]$ -serotonin release reaction. Studies on the binding of purified human thrombin treated with $[^{14}\text{C}]$ -diisopropylfluorophosphate (DFP) to washed human platelets indicated that cadaverine (1-5 μ moles) increased the binding of total $[^{14}\text{C}]$ -DFP-thrombin to platelets by 30%. The data suggest that the alteration of platelet function by diamines and polyamines was probably achieved by their binding to platelet membranes.

TWO DIMENSIONAL IMMUNOELECTROPHORETIC PATTERNS OF ALPHA₂ MACROGLOBULIN IN SUBJECTS WITH AND WITHOUT THROMBOTIC TENDENCIES. Mabel M. Stevenson, Ann G. Davidson, and Thomas J. Tarnay. West Virginia University, Morgantown, WV

In an attempt to determine whether compensatory changes in alpha₂ macroglobulin occur in patients with thrombotic tendencies, studies were performed by the two dimensional immunoelectrophoretic technique of Laurell on the plasmas of healthy laboratory workers and patients with possible thrombotic tendencies. A single, broad, asymmetrical peak was noted in 16 of 18 laboratory workers. A slower moving discrete second spike of lesser magnitude was found in 2 of the 18. A pattern with two peaks appeared in 11 of 14 patients on warfarin therapy for recurrent thrombophlebitis (8 of 8), for prophylaxis after artificial heart valve replacement (3 of 3), and coronary revascularization (1 of 3). Antithrombin III patterns studied according to Sas were normal in all but 2 of these patients. A volunteer ingesting warfarin was normal. A single patient with liver disease showed two peaks.

Preliminary *in vitro* incubation of plasma with thrombin, plasmin, or streptokinase failed to create more than one peak.

These preliminary data suggest changes in alpha₂ macroglobulin may represent *in vivo* coagulation and might provide another means to identify thrombosis prone individuals.