## 1170 INHIBITION OF PF4 and βTG RELEASE FROM PLATELETS BY PIRACETAM

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Platelet factor four (PF4) and beta-thromboglobulin (βTG) were released from human platelets alpha granules by ADP and epinephrine and measured by radioimmunoassay. Both release materials are antiheparins but PF4 is reported to be more potent. However, PF4 is released at about 1/4 the level of βTG in nanograms/ml. Total release occurred with 5 μgm/ml ADP in platelet-rich-plasma adjusted to 200,000 platelets/$mm^3$ and with $1.25 \times 10^{-5}$ M epinephrine. No further release was found by freeze-thawing procedures. In one case, no release occurred although full aggregation proceeded normally with both mediators. Only minimal amounts were recorded after freeze-thawing indicating a storage pool deficiency of PF4 and βTG in an apparantly normal individual. Complete inhibition of PF4 and βTG release was obtained concurrently with elimination of the 2nd epinephrine wave by $6.4 \times 10^{-4}$ M Piracetam. In contrast to aspirin, no inhibition of ADP, Collagen, or Ristocetin aggregation or release occurred with Piracetam. In previous work it was determined that Piracetam even at $6.4 \times 10^{-3}$ M did not modify thrombin, prothrombin, or activated partial thromboplastin times. In addition, clot retraction was not modified in concentrations of Piracetam as high as $1.28 \times 10^{-2}$ M known to eliminate the 2nd wave of platelet aggregation by epinephrine.

## 1171 SEX DIFFERENCES IN PLATELET RESPONSE TO ASPIRIN

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To understand the reported (NEJM 297:1246; 299:53) sex difference in antithrombotic effectiveness of aspirin (ASA), we studied ASA pharmacokinetics and ASA's effect on hemostasis and platelet function in patients undergoing total hip replacement who received either 1.2 gm or 3.6 gm daily. Platelets from women aggregated more with epinephrine and collagen than did those from men, and, although ASA inhibited aggregation in both sexes, the sex difference persisted after ASA. The response did not correlate with ASA dosage. Serotonin release was initially greater with platelets from females but was abolished by ASA in both sexes. Platelet counts were higher in women ($p<0.05$). There was no sex difference in platelet malondialdehyde production or its inhibition by ASA or in basal values or ASA's effect on bleeding time or fibrinolytic activity in whole blood. Serum ASA esterase activity was similar in the two sexes. Plasma salicylate levels were higher in women.

No difference was observed in ASA's effect in the two sexes. The sex difference in the antithrombotic efficacy of aspirin may relate to ASA's failure to eliminate the pre-existent sex difference in platelet count and aggregability.

## 1172 EFFECT OF TRANYLCYPROMINE ON PLATELET AGGREGATION INDUCED BY THROMBIN, ADP, ADRENALINE, COLLAGEN AND ARACHIDONIC ACID

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The monoaminooxidase inhibitor tranylcypromine has been suggested to be a selective inhibitor of prostacyclin synthetase with no inhibitory effect on thromboxane $A_2$ formation in platelets. The substance would then be a suitable tool for discrimination between prostacyclin synthesis and release on one hand and other possible thrombocytophobic properties of the endothelial cell particularly its surface on the other. This study, however, shows that tranylcypromine interferes with platelet aggregation induced by thrombin, ADP, adrenaline and collagen whereas that of arachidonic acid is not affected. The results indicate an inhibition at an earlier common pathway of platelet aggregation than the metabolism of arachidonic acid. It is also suggested that the search for a selective inhibitor of prostacyclin synthesis which does not interfere with platelet functions should continue.

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