Ind. J. Physiol. Pharmac., Volume 33, Number 1, 1989

LETTER TO THE EDITOR

EFFECT OF ASPIRIN ON PLATELET FUNCTIONS IN FEMALES

Sir,

(Received on July 5, 1988)

Sex bias in the beneficial effects of aspirin as an anti-thrombotic remains difficult to explain on the basis of known aspects of arachidonic acid metabolism. Aspirin has been observed to be ineffective as an antiplatelet agent in females in prevention of venous thrombosis (1). Some other earlier results have also suggested a benefit only in males (2,3). The beneficial effect of aspirin in prevention of pulmonary embolism has been reported to be similar in both males and females (4). Present communication deals with effect of aspirin after a single daily dose of 150 mg on platelet functions including platelet aggregation serially for three weeks in females.

Six female healthy volunteers between the age of 18-25 years were included in this study. A detailed history was taken and physical examination done to exclude disease and drug intake which alter the platelet functions and any contraindication to the use of aspirin. 150 mg of aspirin (acetyl salicylic acid) was given every day orally and platelet functions were measured serially at day 0 and end of 1st, 2nd and 3rd weeks (day zero being a pretherapy day). The investigations done were bleeding time, clotting time, platelet count (standard methods) and platelet aggregation (Born's (5) Method) using the Payton Aggregation Module.

It was observed that the bleeding time was significantly prolonged at the end of first week and continued to be so at the end of second and third weeks also ($P<0.05$). However, the clotting time and platelet count were not significantly altered. The significant inhibition of platelet aggregation occurred at the end of 2 weeks. This inhibition persisted till the end of 3 weeks ($P<0.05$) (Table I).

TABLE I : Effect of continuous Aspirin (150 mg) on platelet functions in females.

Observation period in weeks	*Mean ± S.D.*			
	Bleeding time (Min)	*Clotting time (Min)*	*Platelet count (Lac/cu mm)*	*Platelet aggregation (%) (one µg ADP)*
0	4.6±1.1	6.3±1.5	4.3±0.5	55.0±12.3
1	8.0±2.0*	7.3±0.2	4.1±0.2	43.3± 7.6*
2	8.7±2.2*	7.6±0.7	3.9±1.5	22.5±15.6*
3	8.7±2.2*	6.8±0.7	3.0±1.5	15.0±14.1*

* $P<0.01$

Aspirin administration caused a significant prolongation of bleeding time and inhibition of platelet aggregation in all the females studied by us. Earlier results have suggested that anti-thrombotic effect of aspirin is limited to man only both in arterial and venous thrombosis (1,2,3). Comparable sex differences were reported in some but not all trials on aspirin in arterial thrombosis. Aspirin has been found to be similarly effective as anti-thrombotic in both sexes (4,6). The clinical ineffectiveness of aspirin

observed in females has been speculated to be because of certain factors. Norday *et al.* (7) claimed that platelets from female subjects are more reactive and this sex related variation might be related to the level of hormone activity. Menguy (8) however has evaluated acetyl salicylic acid esterase activity to be less in women than in men and hence there is an altered interaction of aspirinized platelets with the vessel wall of males compared with females. Thus from the present work it appears that aspirin is effective as an antithrombotic agent in females also.

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