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LETTERS TO THE EDITOR

Anti-inflammatory activity in human plasma

It has been shown (McArthur, Smith & Freeman, 1972) that a substance possessing experimental anti-inflammatory activity is present in human serum. The lengthy isolation procedure involved the removal of relatively large amounts of denatured proteins and considerable fluctuations in pH. These steps may be avoided since it is possible to separate relatively large amounts of the anti-inflammatory substance by ultrafiltration of 1 litre of pooled human plasma in an Amicon 2L cell using a Diaflo PM 10 membrane. A volume of ultrafiltrate between 200 and 400 ml is concentrated under reduced pressure to a volume of 20 ml which is applied to a 55 × 5 cm column containing Sephadex G25 fine, and eluted with distilled water. The eluate is monitored at 254 nm and the fraction containing tryptophan collected. This procedure has consistently given much higher yields of the anti-inflammatory substance, may be completed within 12 h and obviates the protein precipitation and ether extraction stages of the earlier methods.

The plasma extract showed significant anti-inflammatory activity in the rat paw oedema test when administered as a single intravenous dose 30 min before the subplantar injection of carrageenan. Varying the concentration of the injected extract showed that increasing the dose enhanced both the inhibition of foot swelling and the duration of anti-inflammatory activity. A second similar dose of the extract given 3 h after the first, sustained the anti-inflammatory effect and there appeared to be an additive effect when the plasma extract and one of the antirheumatic drugs, sodium salicylate, were administered together. The plasma extract showed no antagonistic effects towards histamine, 5-hydroxytryptamine, bradykinin, and prostaglandins (E_2 & $F_2\alpha$) when tested against these mediators using appropriate isolated tissues and standard techniques.

The results show that an extract, made from pooled normal human plasma by relatively mild procedures, possesses marked anti-inflammatory activity in the carrageenan oedema test in the rat and this activity is not associated with any *in vitro* effects against the actions of suspected mediators of inflammation.

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