

LETTER TO THE EDITOR

ESCHERICHIA COLI ENDOTOXIN AND CAT PLASMA BRADYKININASE

Sir,

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Escherichia coli endotoxin injection produces a shock which is comparable to septicemic shock. The endotoxin releases, among other vasoactive substances, kinins which contribute to shock. Released kinins are rapidly inactivated by kininase enzymes which occur in plasma and tissues. In rat and dog, this shock is probably aggravated because the endotoxin also inhibits kininase enzyme in their plasma (2). The effect of this endotoxin on plasma kininase in the cat is studied and reported here.

In cats (either sex, 2-4.5 kg) anaesthesia was induced by ether and maintained by sodium pentobarbitone (35 mg/kg ip). Drugs were injected in the catheterized left femoral vein. Blood samples drawn from the right femoral vein in siliconized heparinized syringes were promptly transferred to chilled plastic centrifuge tubes and centrifuged in a refrigerated (0-5°C) centrifuge at 3000 rpm for about 7 min. The separated plasma was conveniently kept in deep freeze (-5 to -10°C) for subsequent bradykininase estimation by the method of Abe *et al.* (1) which uses synthetic bradykinin as a substrate standard for incubation with the plasma. The degree of inactivation of synthetic bradykinin is proportional, under standard conditions (1), to the quantity of functioning plasma bradykininase. Contraction of the isolated guinea-pig ileum by suitable quantity of synthetic bradykinin (kindly supplied to us by Sandoz, Basle, Switzerland) was first obtained and taken as 100%. The reduction in the response after its incubation with plasma samples under standard conditions (1) was then noted; the percent reduction was taken as index of bradykininase activity. Three cats were used in each group. Control group received only saline and experimental group received *E. coli* endotoxin (purified powder, batch 055 : 85, Sigma Chemicals, U.S.A.) as solution in saline. The results are given in Table I.

In the control cats, bradykininase activity progressively increased during the 60 minute period. Almost equal increase was seen in the endotoxin-treated cats. The

results indicate that unlike in rats and dogs, the *E. coli* endotoxin did not reduce plasma bradykininase activity in the cat.

TABLE 1 : Bradykininase activity in cat plasma.

Percent reduction average (and range) in contraction after bradykinin - plasma incubation.

Drug (iv)	Time (min.) after drug injection			
	0	15	30	60
Saline	35 (18-55)	44 (39-48)	59 (50-65)	65 (59-69)
<i>E. coli</i> Endotoxin 2 mg/kg	35 (18-55)	52 (49-58)	60 (57-65)]	68 (63-71)

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