LETTER TO THE EDITOR

Histamine and 5-Hydroxytryptamine after Cutaneons Burn in Mice and Rats.

SIR,—We have reportedï[1] that we were unable to confirm the rise in skin histamine after superficial skin burn in mice within 24 hours as noted by Dekanski[2]. The experiments have now been repeated in albino mice and rats and the observations continued for three weeks after superficial skin burns.

Groups of 6 animals were anaesthetised with ether and immersed in hot water at 60° for 10 seconds. The animals were killed at 10 minutes, 2 hours, 24 hours, 7 days, 14 days and 21 days thereafter. Control groups of animals anaesthetised and allowed to recover were killed at similar time-periods for comparison of skin histamine and 5-hydroxytryptamine content. The extraction and assay procedures were similar to those described by Parratt and West[3].

The earlier observation that the skin histamine is not raised within 24 hours after superficial skin burn was confirmed in both mice and rats. On the other hand there was a moderate lowering of the histamine content of the whole skin along with mast cell degranulation and rupture. Values were not very much altered in 7 day samples. Samples examined 14 days and 21 days after burning showed a remarkable change. It was found that both in mice and rats there was a 50 per cent rise in the histamine content of the whole skin after 14 days whereas the corresponding rise was above 150 per cent in 21 days. The experiments were repeated thrice at these times with similar results. During this period, 5-HT values did not alter. Also there was no significant proliferation of mast cells in the subcutaneous tissues of either species.

Most of the animals died after 3 weeks and later changes could not be studied.

The mechanism of the delayed rise in the skin histamine is being studied and will be reported later. Eosinophils are usually associated with histamine metabolism and it has been noted in clinical practice that a delayed eosinophilia often develops 4–6 weeks after a burn and lasts for weeks[4]. It is not improbable that the delayed eosinophilia may be associated with similar alterations in histamine metabolism as has been found in experimental animals.

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