Anaphylaxis in Isolated Rat Mast Cells

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The object of this study was to answer the question as to how far lysolecithin plays a role in immune cellular injury. A comparison has therefore been made of the pharmacological effects of lysolecithin and of antigen-antibody reaction on isolated rat mast cells in the presence of normal human serum or a serum containing only minute amounts of albumin. No correlation existed between these effects.

Further studies with mast cells pre-incubated with aggregated human γ -globulin and washed revealed that addition of fresh serum to these cells resulted in a marked decrease in complement activity; these cells appeared morphologically intact and no release of histamine was observed. Thus, a localized complement-carried cellular injury by lysolecithin seems improbable.

Experiments with purified bee venom phospholipase A and human lipoprotein fractions revealed that (1) c'lipoprotein is a suitable substrate to obtain haemolysis but not for mast-cell lysis, (2) each of the three fractions tested yielded the same amount of lysolecithin, and was capable of binding lysolecithin to the same amount, and (3) none of these fractions had a marked inhibitory effect on the immune reaction. No support is given to the hypothesis of a complement-carried lytic principle responsible for immune cellular injury of mast cells.

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