Evidence for the mechanism by which garlic inhibits platelet aggregation.
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Abstract
Aqueous extract of garlic inhibited aggregation induced by ADP, collagen, arachidonate (AA), epinephrine and calcium ionophore A23187 in a dose-dependent manner. In an attempt to clarify the mechanism of inhibition of aggregation, metabolism of arachidonic acid in platelets was examined in the presence of garlic extract. It was found that: garlic reduced the formation of thromboxane from exogenous AA; garlic inhibited the phospholipase activity; garlic inhibited the formation of thromboxane and lipoxygenase products formed in platelets prelabelled with AA; and garlic inhibited the incorporation of arachidonate into platelet phospholipids. These effects may explain, in part, inhibition of platelet aggregation. Further, since garlic was also effective in inhibiting aggregation induced by calcium ionophore A23187 it may be suggested that the antiaggregation effect may be related to intraplatelet mobilization of calcium. Inhibition of epinephrine-induced aggregation by garlic extract may suggest that it may be inhibiting uptake of calcium into platelets thereby lowering cytosolic calcium concentrations. Thus garlic appears to be in possession of components which might exert their effects at various stages involved in the process of platelet aggregation.

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