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Comparison of the effects of some alcohols on the gastric electrical potentials

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Potential difference across the stomach wall (PD) is determined by the gastric electrolyte mucosal barrier. The decrease in the PD caused by "barrier breakers", e.g. aspirin, ethanol, cholic acids is a sensitive index of the mucosal damage. We compared in anesthetized Wistar rats the effect of ethanol with the action of some other alcohols contained in alcoholic beverages and additionally with the effects of denatured and salicyl alcohols. The intragastric administration of 1 ml of 40 vol% solution of different alcohols caused the following changes: ethanol decreased the PD value by 39%, methanol by 45%, n-propanol by 48% and isopropanol by 46%. Denatured alcohol diminished the PD value by 53% and salicyl alcohol by 66%. The results indicate that some alcohols may enhance the damaging effect of ethanol on the gastric mucosal barrier. The greatest and most prolonged drop in the gastric PD was caused by the salicyl alcohol.