

# Investigations on the ethanol-induced flushing reaction: effects of propranolol and dipyridamole on acetaldehyde and prostacyclin metabolism

Guivernau, Mauricio

Quintanilla, Maria Elena

Tampier, Lutske

Disulfiram, an aldehyde dehydrogenase (ALDH) inhibitor, induces a flushing reaction upon the ingestion of ethanol, exerting aversion against alcohol that has been used in the treatment of alcoholism. This unpleasant response has been associated with an accumulation of acetaldehyde, and more recently, with an increase in vascular prostacyclin (PGI<sub>2</sub>) production. To evaluate the possibility of evoking the flushing reaction with drugs less toxic than disulfiram, we studied the effects of propranolol and dipyridamole on ALDH and PGI<sub>2</sub>. Acetaldehyde oxidation rate was assessed by gas chromatography in mitochondria from rats treated with these drugs for seven days. Prostacyclin generation was determined in rat aortic rings incubated in Krebs-Ringer with these drugs separately and associated to acetaldehyde, and measured by radioimmunoassay of 6-keto-PGF<sub>1α</sub>. Propranolol inhibited acetaldehyde oxidation rate whereas dipyridamole did not. Furthermore, propranolol increased blood acetaldehyde levels w