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SALIVA CYTOKINE CONCENTRATIONS THE DAY AFTER HEAVY ALCOHOL CONSUMPTION IN DRINKERS SUFFERING FROM A HANGOVER VERSUS THOSE WHO CLAIM TO BE HANGOVER RESISTANT

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Aim. As it has been suggested that the immune system plays a role in the pathogenesis of the alcohol hangover, the purpose of this naturalistic study (amount, day and place of drinking were the subjects own choice) was to investigate cytokines concentrations in saliva after an evening of alcohol consumption. Drinkers reporting having a hangover were compared to drinkers claiming not to be affected by a hangover (i.e., hangover resistant subjects).

Methods. N = 36 healthy subjects (N = 17 hangover resistant, N = 19 suffering from a hangover), age 18 - 35 years, regularly consuming >5 drinks, participated. Saliva samples were collected on a control day (no alcohol consumed) and on a hangover day, approximately 9 hours after stopping alcohol consumption. Cytokine concentrations (IL-1β, IL-2, IL-4, IL-5, IL-6, IL-8, IL-10, GM-CSF, IFN-γ and TNF-α) at both days were compared between subjects with a hangover and the hangover resistant group.

Results. Total amount of alcohol consumed (11.6 ± 4.6 alcoholic drinks) did not significantly differ between the groups (p = 0.61). Relative to the control day, significant increases in IL-2, IL-4, IL-5, IL-6, IL-10, IFN-γ and TNF-α concentrations were found in the hangover condition. No significant differences were demonstrated between the groups except that GM-CSF concentration on the hangover day was significant lower in the hangover resistant group.

Discussion. The data confirm that changes in immune reactivity are associated with the pathogenesis of the alcohol hangover. More research is needed to elucidate why some drinkers claim to be hangover resistant despite heavy alcohol consumption.