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The Interaction between Alcohol Consumption and Polymorphisms of *ADH1B* and *ALDH2* on the Prognosis of Head and Neck Cancer

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Background: Most studies to date have examined the influence of lifestyle factors, including alcohol drinking, on HNC risk. In contrast, less is known regarding the impact of lifestyle factors on the outcomes of HNC. Therefore, we decided to conduct an analysis to assess the role of alcohol drinking in the prognosis of HNC. **Materials and Methods:** The current analysis included 740 head and neck cancer (HNC) patients. Detailed information on alcohol consumption was collected by in-person interview. In addition, single nucleotide polymorphisms, rs1229984 of ADH1B and rs671of ALDH2, were genotyped. Statistical analyses were performed to evaluate the role of alcohol and the interaction between alcohol and ADH1B rs1229984 and ALDH2 rs671 on the overall survival of HNC. **Results:** Ever alcohol use was associated with a worse overall survival of HNC (hazard ratio (HR) = 1.43, 95% confidence interval (CI): 1.03-1.98). Furthermore, ever alcohol use was associated with a later stage and higher grade of HNC at diagnosis. The worst overall survival of HNC occurred among alcohol drinkers who carry the fast ADH1B (*2/*2) and slow/non-functional ALDH2 (*1/*2 + *2/*2) genotype combination. **Conclusions:** Our results suggested that alcohol use not only can increase the risk of HNC but is associated with a poorer overall survival of HNC. The HNC associated with alcohol use tended to be more aggressive with a later stage and higher grade, which may explain the worse overall survival of HNC associated with alcohol drinking.