Abstract

Background and Aims: The aims of the present study were to determine: (i) whether alcohol consumption is greater in individuals with HFE mutations; and (ii) whether common HFE mutations modify the effects of alcohol on serum iron and liver biochemistry or morbidity.

Methods: The residents of the town of Busselton in Western Australia were subject to cross-sectional health surveys between 1966 and 1983. In 1994/1995 all surviving participants of the earlier surveys were invited to take part in a follow-up survey. Logistic, linear and Poisson log-linear regression analyses were performed in 1490 men and 1452 women from the 1994/1995 survey to assess the relationships between HFE mutations, alcohol, iron levels, liver biochemistry and morbidity.

Results: Heavy or moderate alcohol consumption was present in 7% or 36% of men and 0.5% or 12% of women, respectively. Alcohol consumption strongly influenced levels of serum ferritin and gamma glutamyl transpeptidase (GGT) and mean cell volume (MCV) in men and women but only alanine aminotransferase (ALT) levels in women. These effects were independent of HFE gene mutations. Hospital admission rates for respiratory disorders were higher in men with the C282Y mutation.

Conclusions: Alcohol consumption strongly influences serum ferritin and GGT levels and MCV in men and women but only ALT levels in women, and these effects are independent of HFE mutations. HFE gene mutations do not predispose to moderate or heavy alcohol consumption. The C282Y mutation is associated with increased respiratory admission rates in men.