Effect of aldehyde dehydrogenase-2 genotype on cardiac autonomic nervous responses to moderate alcohol ingestion

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**Background:** Asian people are divided into the individuals who can ingest alcohol and cannot because of the difference of aldehyde dehydrogenase-2 (ALDH2) genotype. The purpose of the present study was to investigate the effect of ALDH2 genotype on cardiac autonomic nervous responses to moderate alcohol ingestion.

**Methods:** Subjects were 17 healthy male students at Kyoto University. According to the difference of ALDH2 genotype, they were divided into two groups: the **STRONG** (n=10) and **WEAK** (n=7) group. The subjects ingested 10 (the LITTLE trial) or 30 g (the MUCH trial) of pure alcohol on a separate day randomly. We collected ECG data and analyzed QT interval.

**Results:** ECG QT interval, the important marker for sudden cardiac death in cardiac patients as well as healthy people, of the **STRONG** group were not prolonged after alcohol ingestion, but that of the **WEAK** group were significantly prolonged, compared to control. Moreover, with respect to the comparison of the change of QT interval between the LITTLE and MUCH trials, there were also no significant differences in the **STRONG** group. In the **WEAK** group, however, the change was more marked at MUCH trial.

**Conclusions:** It is concluded that the cardiovascular response to alcohol ingestion is influenced by ALDH2 genotype and that the drinking assumed to be in moderation puts a strain on the hearts for the ALDH2-deficient individuals. The results of this investigation show that moderate drinking does not have a good effect on everybody with respect to QT interval.