Shift Work

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Shift work increases the frequency of duodenal ulcer in H pylori infected workers

Evidence in support of a causal association between night shift work and stomach ulcers. In this study the association with night shift work was moderate to strong but there was no attempt to identify which aspect of night shift work, or associated lifestyle choices, could provide a mechanism. Night shift work is of increasing prevalence, *H Pylori* infection is very common.

The primary cause of stomach ulcers is infection with *H Pylori*; a common bacterium. Many people are infected but have no clinical manifestation. The study here assesses whether clinical manifestation rates are affected by night shift work.

People who reported to their GP complaining of persistent stomach pains were tested for the presence of *H pylori* in the stomach and upper intestine. 941 patients were tested and 395 (41%) had *H pylori* infection. Those with infection were then tested for stomach, duodenal and peptic ulcers unless they had already been assessed, were regular users of NSAIDS (suspected of causing ulcers) and other drugs associated with stomach complaints.

Day time workers were defined as those who, for at least a year, regularly worked their hours between 6 a.m. and 7.30 p.m. Night shift workers were defined as those whose shift included at least 3 hours between midnight and 5 a.m.

In common with many similar studies the prevalence of smoking was higher in shift workers; 38% vs. 26%.

The prevalence of duodenal ulcer was higher in night shift workers than in day time workers; 29% vs. 9%. Odds ratio = 3.9 (95% CI = 2.1 to 7.5). Smoking status did not contribute to this. The prevalence of peptic ulcer was also higher among night shift workers; OR = 3.1 ((5% CI = 1.1 to 8.5) when compared with other shift workers.

The authors propose that sleep deprivation may be associated with increased gastric acid secretion and the cellular changes associated with ulcer initiation.

Comment
The study is unusual in that it properly corrects for different rates of *H pylori* infection in day and night shift workers. The finding of increased risk of ulcer in night shift workers therefore more clearly suggests that night shift work increases the rate of conversion from infection to disease. This could be for any number of reasons not related to the fault of the employer.

Elimination of infection is relatively cheap and straightforward. Detection of infection is also straightforward. The suggestion is that night shift workers be screened and, if infected, treated. Recurrence of infection has a low probability in general.

Weakness of the study:
Self selected GP contact. Lack of control for confounding factors (including the choice to be a shift worker). Variable use of reference groups. Cross-sectional design.

Strengths of the study:
Objective determination of *H Pylori* infection and of ulcer status.