

## The Effects of Alcohol Consumption in People with Diabetes Mellitus: A study based on a cohort of 7,418 patients seen at St Thomas' Hospital 1979-1998

### Introduction

There is increasing evidence that healthy drinking of alcohol provides some protective effect in reducing the risk of arterial thickening associated with ageing as well as the risk of heart attacks and strokes. The French were the first to discover this and attributed these effects to anti-oxidant properties of alcohol, particularly red wine. People with diabetes mellitus have an increased risk of developing vascular disease. At the time of diagnosis most people who develop diabetes are seen by a dietitian. Most dietitians advise their patients to cut back on their alcohol intake. Could this put them at greater risk of vascular disease?

Computer-based clinical records facilitate record research and audit. The diabetes clinic at St Thomas' Hospital has had a computerised patient record system - Diabeta - for more than 30 years. During this time information about lifestyles have been collected routinely on all newly referred patients, without exception. This includes information on smoking and drinking habits.

Levels of alcohol consumption were classified into four groups defined in 1973, before any National standards or guidelines for 'Healthy Drinking' were invented, these groups were:

1. None
2. Trivial (less than 2 units per week)
3. Moderate (more than 2 units per week and less than 6 units per day)
4. Heavy (more than 6 units per day)

The number of patients in each group were 2858, 2070, 2149, 341 respectively. Through record linkage Death Certificates were obtained for 1,314 of those who have died. Using appropriate statistical techniques, mortality rate was adjusted by age, sex, race and smoking.

The aim of this study, carried out by Dr Chao Weng and Professor Peter Sonksen at St Thomas' Hospital and King's College, London, was to examine if alcohol consumption declared by people with diabetes is associated with poor metabolic control, increased risk of diabetic complications or premature mortality.

### Findings

- A significant positive correlation was found between blood pressure (BP) and all levels alcohol consumption.
- Better metabolic control (as indicated by a lower HbA1) was seen in trivial and moderate drinkers compared to abstainers.
- Less nerve damage (peripheral neuropathy, as indicated by a lower age-corrected Vibration Perception Threshold at the ankle and toe) was observed in both trivial and moderated drinkers compared to abstainers.
- Moderate or trivial alcohol consumption was associated with a significant risk reduction for the prevalence of proteinuria, peripheral neuropathy, stroke, angina, hypertension and amputation at the first hospital visit compared to abstainers.

- There was the expected association between peripheral neuropathy and heavy alcohol consumption
- The above relationships were not adjusted for age, sex, race and smoking. In a further analysis, however, after adjustment for differences in age, sex, race, smoking, BMI, BP (systolic) and history of diabetic complications, it was shown that moderate drinkers had a 20-40 % reduction in risk of death from all-causes and Coronary Heart Disease when compared to the abstainers (relative risk = 1.0).

### Implications

- Moderate drinking may result in a better blood glucose control, less peripheral neuropathy and less risk of developing diabetes complications. There are established biochemical reasons why this may be the case. Heavy drinking is associated with a higher blood pressure and increased prevalence of peripheral neuropathy.
- Moderate drinking may reduce the risk of death from all-causes and Coronary Heart Disease in particular. Heavy drinking is related to a higher risk of death from alcohol related diseases (e.g., gastrointestinal and injuries).
- Drinking habits in people with diabetes are rather stable over time. People with established diabetes drink less than those newly diagnosed. This may reflect the results of education and counselling at the time of diagnosis. The results of this study indicate that educational material for people with diabetes should be reviewed and a more liberal approach considered.

### Further Information

- The moderate drinking category in this study (devised in 1973) is between 2 units per week and 6 units per day. The Royal Colleges of Physicians, Psychiatrists and General Practitioners recommend up to 2 units per day for women and 3 units per day for men. The study should not be taken to imply that up to 6 units per day is recommended for people with diabetes but it does suggest that people with diabetes can treat alcohol in the same way as people without diabetes.
- This study does not rule out the possibility that patients who were abstinent or drinking trivial amounts were drinking less because of illness. In other words illness resulted in abstinence rather than abstinence resulting in illness.
- Also this study could not control for personality attributes, such as sociability, that are sometimes associated with moderate alcohol consumption and can have a protective effect against heart disease

### Research Team

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