



## **Fatty liver**

'Fatty liver' is not a specific disease but refers to a condition caused by a variety of factors (environment, nutrition, endocrine disorders, or toxins). Alcohol is the most common toxin.

## **Alcoholic Liver Disease**

The liver protects your body from the toxic effects of alcohol by breaking it down into less harmful substances. It is the main organ in the body for doing this. Because it receives the greatest concentrations of alcohol the liver is more prone than other organs to developing alcohol related problems.

Many excessive drinkers will experience the first stages of fatty liver disease caused by alcohol but most can overcome this by reducing their alcohol consumption significantly. However, 20-30% of excessive drinkers [more than 3-4 units per day for men according to UK guidelines, although definitions vary] will develop alcoholic hepatitis, of which 10% will develop cirrhosis if they continue to drink heavily. Alcohol consumption is known to increase the rate of cirrhosis progression from whatever cause.

## **Prevalence in the UK**

- 38% of men and 16% of women (26% overall, aged 16-64) have an alcohol use disorder in England.<sup>1</sup>
- This equates to 8.2 million people of whom 1.1 million are alcohol dependent.<sup>1</sup>
- One quarter of the population drinks above the former weekly guidelines of 14 units for women and 21 units for men.<sup>2</sup>
- 6.4m drink up to 35 units a week (women) or 50 units a week (men).<sup>2</sup>
- A further 1.8m, two-thirds of them men, drink above these levels.<sup>2</sup>

It is estimated that 20,000-30,000 people are heavy social drinkers in UK vulnerable to developing end-stage liver disease.<sup>3</sup> For both males and females, the greatest changes in drinking behaviour have been found among those aged 16-24, with increasing proportions drinking more than 28 units per week (22% in 1993 to 34% in 2002).<sup>4</sup>

Hospitalisation data from 1988 to 2000 show a pattern of rising rates of alcoholic liver disease (ALD), particularly in males, and even in the 25-34yr age group. Anecdotal evidence suggests that an increasing number of women in their late 20s, early 30s are now being seen in hepatology clinics with ALD.

## **ALD mortality in the UK**

UK is unique among near Continental neighbours in experiencing rising numbers of deaths from chronic liver disease related to alcohol consumption. The growing culture of 'binge drinking', particularly amongst young people, and interaction with other conditions have contributed to this increase.

Between 15,000 and 22,000 deaths each year are associated with alcohol misuse.<sup>2</sup> ALD mortality from 1988 to 2000 rose steeply in 45-64yr old men particularly in the late 1990s, but mortality increased in all age groups, even those only 25-34yrs. Female rates of alcoholic



related mortality are rapidly approaching those of men.<sup>5</sup> Deaths from alcoholic cirrhosis have increased by 88% in the UK between 1974 and 1994.<sup>6</sup>

The cost of alcohol misuse to the National Health Service is calculated to be £1.7bn per annum, through liver disease and premature deaths, accident and emergency admissions, and the provision of specialist alcohol services.

### **World**

The World Health Organisation reported in 2002 that alcohol caused 1.8m deaths worldwide, equal to 3.2% (5.6% in males). 20-30% of all oesophageal cancer, liver disease, epilepsy, motor vehicle accidents and homicide can be attributed to alcohol.<sup>6</sup>

In 2003, estimated deaths from liver cancer in the US were 14,400, with 17,300 new cases.<sup>7</sup> Liver cirrhosis accounts for 13% of all alcohol-attributable deaths in Europe.<sup>8</sup>

### **Non Alcoholic Fatty Liver Disease (NAFLD)**

NAFLD encompasses a broad spectrum of liver damage, from steatosis to steatohepatitis, fibrosis and cirrhosis.

Prevalence in the UK and USA general population is 20%<sup>9</sup>, (@12 million and 60 million people respectively), but can range from 6-40% depending on definitions and populations used.

The diagnosis of NAFLD is based upon convincing evidence of absent or minimal alcohol consumption, compatible histological changes in liver biopsy and the exclusion of other liver diseases. Most persons with NAFLD are asymptomatic, diagnosed only after screening blood reveals elevated serum AT levels. Liver biopsy is helpful in establishing the degree of inflammation and fibrosis, and in distinguishing the condition from NASH.

The natural history of NAFLD remains to be defined. Patients with pure steatosis on liver biopsy follow a relatively benign course, whereas patients with histological necro-inflammatory changes and/or fibrosis may progress to end-stage liver disease. NAFLD may lead to cirrhosis in 20% and to death in 8% of cases, rising steeply in patients with adverse risk factors. It is now increasingly observed in children as obesity rates rise.

### **Risk Factors for NAFLD**

- Diabetes Mellitus
- Obesity
- Female (particular risk in 40-60yr age group)
- Drugs (Amiodarone, Corticosteroids, Isoniazid, Tamoxifen)
- Hyperlipidaemia
- Jejunioleal bypass
- Total parenteral nutrition

An initial step in the treatment of non-alcoholic fatty liver disease is the management of associated conditions, such as obesity, diabetes mellitus and hyperlipidaemia. Non-alcoholic fatty liver disease patients with steatohepatitis and/or fibrosis on liver biopsy may benefit from



investigational pharmacological therapy. Patients with decompensated cirrhosis from non-alcoholic fatty liver disease may be candidates for liver transplantation.

### ***Non alcoholic steatohepatitis (NASH)***

In the USA, NASH, the most severe histological form of NAFLD, accounts for approximately 3% of the general population<sup>10</sup> (@ 9 million people), rising to 20-40% among obese patients. It can progress to cirrhosis in 25% and death in 10% of cases.

Until recently, conventional wisdom has considered NASH to be a relatively uncommon and benign condition restricted largely to middle-aged, obese, diabetic women. However it has recently been recognised that NASH may be one of the most common liver diseases in the developed world and occurs in some individuals who are neither obese nor diabetic. Like non insulin-dependent diabetes mellitus and coronary heart disease, NASH may be considered a "disease of affluence" and as a result is almost certainly increasing in frequency.

Rising hospitalisation for NASH has been noted in the UK but is not yet reflected in mortality rates.

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