



FOCUS ON RESEARCH

SCOTTISH ALCOHOLIC LIVER DISEASE EVALUATION OF EPIDEMIOLOGY AND COSTS OF FIRST AND SUBSEQUENT HOSPITAL ADMISSIONS (SCALE)

Researchers

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Aim

To study patients who are admitted to hospital with Alcoholic Liver Disease (ALD) for the first time. Following up these patients by studying their subsequent hospital admissions until their death will describe the nature and scale of the ALD problem.

Project Outline/Methodology

Scottish patients with a first hospital admission of ALD between 1991 and 2011 were selected. ALD was defined by International Classification of Diseases codes in hospital records. First ALD hospitalisation rates were statistically modelled to assess how year of admission, age, sex, Health Board and Scottish Index of Multiple Deprivation (SIMD) affected them. First ALD hospitalisations were classified into 3 groups – ALD with decompensation (most severe liver disease), ALD without decompensation and hospitalisation with ALD (but not *for* ALD). Hospital costs were measured using per day estimates based on length of stay, specialty of care, hospital and Health Board. Statistical analyses were conducted to see how disease severity and other relevant factors influenced the risk of dying during the first ALD hospitalisation. Survival analysis investigated how these same factors influenced the risk of dying after discharge and the risk of readmission for ALD, alcohol related conditions, or other reasons. Costs for the different scenarios were calculated and compared with a control group (people similar to ALD patients in terms of sex, age and where they come from).

Key Results

The rate of first ALD hospitalisations increased between 1991 and the mid-2000s but has steadily decreased between 2008 and 2011 with the pattern of trend the same regardless of sex, age or SIMD status. Overall, 17% of patients died during their first ALD hospitalisation (the risk is increased 75% if first ALD was with decompensation compared to without). The risk of dying in-hospital has reduced over time for all groups. Of the people discharged alive from first ALD hospitalisation, more than 50% died within 5 years (the risk of death highest for patients admitted with decompensation). Unlike the risk of

dying in-hospital, the risk of dying after discharge from a first ALD hospitalisation has not changed over time. The average number of readmissions per year for patients after discharge is 3.1 and this increased over the years. The risk of being in hospital at any given time is 2.5 times greater for the patient group with ALD compared to the control group. Costs for hospital admissions are 17 times higher for ALD patients compared to the controls. Even for patients who are admitted not specifically for their ALD, very high costs result through their hospital admissions. Any intervention which would prevent a first ALD hospitalisation or reduces the risk of readmission is highly likely to provide good value for money.

Conclusions

A first admission to hospital with ALD often indicates a very poor outcome with a high risk of dying during that hospitalisation or afterwards. Those discharged alive are often readmitted to hospital, often multiple times, which causes high costs for the NHS.

What does this study add to the field?

We have shown that in Scotland the risk of dying during a first ALD hospitalisation reduced between 1991 and 2011. However, the risk of dying after discharge did not change over the study period while readmission rates increased. Our study shows that any intervention that could prevent ALD occurrence or slow progression of the disease is likely to provide good value for money.

Implications for Practice or Policy

Prevention policies are needed that can stop ALD occurring in the first place as this study shows there would be substantial numbers of lives (and healthcare costs) saved. We need to do more to care for ALD patients after they have been discharged. This could be achieved through improved follow-up and better links between hospital doctors and GPs.

Where to next?

To study in more detail what are the main problems that are causing these patients to be readmitted so frequently and to improve post-discharge survival.

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