Trends in the reported rates of suicide by self-poisoning in the elderly

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SUMMARY. Trends in the reported rates of suicide by self-poisoning in the elderly from 1974 to 1984 are presented. When all drugs were considered together there was evidence of a slow but progressive decline in age specific rates of suicide in both sexes over the period studied. When individual drugs were considered, however, the overall fall was attributable almost exclusively to a fall in suicides using barbiturates, which reflected the decrease in barbiturate prescribing over this time. Suicides using other drugs, particularly benzodiazepines and analgesics for mild to moderate pain, increased, particularly among elderly women, with co-proxamol showing the biggest increase over the period studied. In many cases deaths were the result of multiple drug ingestion. Implications for the management of the elderly at risk are discussed in the context of the difficulties in identifying depressive illness in the elderly and the general rise in the elderly population.

Introduction

The elderly comprise 15% of the population of England and Wales but account for between 20% and 30% of total suicides. Durkheim1 was the first to show that suicide rates tend to increase with advancing age and that males are consistently more at risk than females of the same age. Since the turn of the century suicide rates have fluctuated, being highest at times of economic difficulties and lowest during the two world wars. Since 1961 there has been a considerable decline in suicide rates for all ages and both sexes, being most marked in men,2 and this appears to be attributable almost entirely to the detoxification of domestic gas supplies.3 Suicide rates for all ages and both sexes have flattened out since 1974, and there is a suggestion of a more recent increase, particularly among the male population.4,5

There is ample evidence that suicide-prone individuals seek contact with the medical profession.6-8 In one study just under 90% of the elderly who committed suicide had consulted their general practitioner within three months of their death and just under 50% had died within a week of the consultation.6 Diagnosis of an underlying depressive illness in the elderly is often difficult to make because the prominent symptoms are usually those of sleep disturbance or somatic disorder. Consequently analgesics, barbiturates and more recently benzodiazepines prescribed for symptomatic relief are lethal agents in the hands of the depressed suicidal elderly person.10,11 Each year the Office of Population Censuses and Surveys (OPCS) publishes statistics on population trends and causes of mortality.12 Over the period 1974–84 the elderly population in England and Wales has increased, but rates for self-poisoning in the elderly have declined in both sexes. This paper analyses the variation in the use of individual drugs which underlies this trend.

Method

Since 1974 the OPCS has issued information on the substances ingested in all cases of self-poisoning in England and Wales on which a verdict of suicide has been returned by the local coroner. Taking into account the yearly variations in estimated populations, the cause of death by specific groups of drugs over the last 11 years were calculated as age specific rates for the whole of the population of England and Wales aged 15 years and over. Two groups were compared: those over 65 years old and those aged 15 to 64, as suicide in childhood is very rare and inclusion of the population aged under 15 years would bias the statistics. Four major categories of drugs were analysed: barbiturates, analgesics for mild to moderate pain, benzodiazepines and antidepressants. The time series of data for each of the age specific rates for the various drugs was plotted over the period 1974–84. This data, together with that for the overall rates for self-poisoning in the same period, was subject to statistical analysis to model the trends using the regression routine in the 'Minitab' package on the Multics computer at the University of Bristol. Both linear and log-linear trends were fitted and, in the case of the series with an obvious turning point, a quadratic term was added to the linear model. In all except the series of overall rates data for 1981 was not available. All claims made in the results are supported by significant statistical tests unless otherwise stated.

Results

Rates for suicide by self-poisoning decreased in all ages and both sexes between 1974 and 1984 (Figure 1). The rates were consistently higher in the population over 65 years, with rates for women higher than for men. The rates for elderly men decreased from 61.3 per million to 38.8 per million (3.6% per annum) and for elderly women from 78.0 per million to 52.9 per million (2.6% per annum) over the 11-year period.

Figure 1. Age specific rates per million population for suicide by self-poisoning 1981–84.
Considering individual groups of drugs the most dramatic fall was in the rate of barbiturate poisoning, which decreased from 48 per million to nine per million in elderly women with a similar proportional fall in elderly men from 31 per million to eight per million (Figure 2a). The estimated decrease in both cases was 14.5% per annum with deaths among women at a higher average level. These decreases were mirrored in the population aged 15–64 years.

Deaths owing to self-poisoning by antidepressants were the only group in which the younger population yielded consistently higher rates. In the elderly the rates declined slightly although not significantly over the period studied and antidepressants accounted for only 3.5% of self-poisoning deaths in elderly men and 5.8% in elderly women in 1984 (Figure 2b). Again, rates for women were higher than for men.

The figures for self-poisoning with analgesics for mild to moderate pain presented a very different picture. The rates were higher in the elderly and, while the figures for the younger population showed a tendency to fall since 1979, the rates for the elderly continued to rise (Figure 2c). This was particularly so among elderly females for whom the upward trend was significant ($P<0.001$) while that for males was not quite significant. Nonetheless the difference in trends remained significant. Three drugs — aspirin, paracetamol and co-proxamol — made up over 90% of minor analgesics ingested and analysis of these drugs individually showed that the increase in rates for elderly women was accounted for predominantly by a rise in co-proxamol deaths, with a 30-fold increase over the period studied (Figure 3). The number of deaths from paracetamol also increased by an average of 17% per annum but aspirin deaths showed a decrease averaging 7.4% per annum.

The rates for benzodiazepine suicides were very low in the younger age group and varied only slightly over the period studied, showing a small but significant upward trend (Figure 2d). Again, rates in the elderly presented a very different picture, rising steeply in elderly women from 1.4 per million in 1974 to 5.4 per million in 1984. When compared with the trend for the younger age group this was highly statistically significant ($P<0.001$). This rise was not so dramatic in the elderly men, just failing to reach significance in comparison with the younger group ($P=0.06$), but nevertheless the underlying trend was up-

Figure 2. Age specific rates per million population for suicide by self-poisoning 1974–84 with (a) barbiturates, (b) antidepressants, (c) analgesics and (d) benzodiazepines.

Figure 3. Number of suicides with analgesics for elderly women 1974–84.
ward. The hypnotics nitrazepam and flurazepam accounted for the majority of deaths from benzodiazepines.

The proportion of all deaths by self-poisoning accounted for by the four major groups of drugs fell from 72.3% to 58.7% of cases in elderly men and 83.2% to 62.9% in elderly women. There was no corresponding increase in the use of any other single drug, although a multiplicity of agents ranging from digoxin, diuretics and antibiotics to cyanide and household bleach caused death. Rather the trend was towards multiple substance ingestion with one of the four main groups described being a component.

Discussion

The validity of officially produced suicide statistics has been a matter of much discussion, the debate centring around the misclassifications which can arise from coroners' verdicts of 'suicide', 'accident' and 'undetermined'. This is a particular problem with regard to the elderly, as intent may be difficult to establish in a context of isolation, poor physical health, acute confusion or chronic mental deterioration. However, recent reviews12,13 have concluded that although it is likely that there are some errors in the classification of suicides, none of the potential sources of artefact can explain the large observed fluctuations in suicide rate over time. In the elderly, for example, suicide rates from all causes in all age bands increased on average by over 10% between 1975 and 1980; there was a similar increase in undetermined deaths and a small decrease in accidental deaths, which do not account for the increase in suicide solely by a change in classification.4 Rates for suicide were consistently much higher than for undetermined and accidental deaths combined, suggesting a level of intent which has implications for identifying a potentially preventable cause of death. International comparisons of suicide rates have also shown an extremely high degree of consistency over time.14 All these observations suggest that recent data provide an accurate reflection of the current situation with regard to suicide and hence can be analysed and commented on with some degree of confidence.

The downward trend in suicide by self-poisoning in the elderly is encouraging. The reduction in barbiturate prescribing by doctors has produced a dramatic decrease in its use for suicide to the extent that death by barbiturate poisoning in the young has almost been eliminated. The decrease has been no less dramatic in the elderly, albeit, despite this, death from barbiturate ingestion remains the second most common cause of suicide by self-poisoning in both elderly men and women.

A fresh challenge is how the more disturbing rise in suicides using benzodiazepines and minor analgesics can be halted. This may depend on the early identification and prompt and appropriate treatment of the at risk individual. Chronic painful physical conditions and disturbance of sleep are common clinical problems in the elderly in general practice. Differentiating between those for whom symptomatic relief is most appropriate and the individual with underlying depression who is at risk of suicide is a difficult task but is well worthwhile.15 Psychotherapeutic services are expanding throughout the UK and the early referral of elderly people who are depressed and anxious may have beneficial results both in the short and long term. The development of safer, less sedative and less cardioactive antidepressants, coupled with the generally good response of the elderly to electroconvulsive therapy means that depression in the elderly is now more easily treated. Longer term benefits may also accrue in terms of continuing day hospital support, the involvement of community psychiatric nurses and increased input of social service provision. Recent reviews16,17 would suggest that one of the high risk groups for suicide are elderly people, predominantly men, living alone or socially isolated, with a past history of mental illness or a previous suicide attempt, who have suffered a recent upsetting event, particularly when accompanied by a physical illness or an already established depressed mood. There is no evidence to suggest that attempting to discuss suicidal ideation may plant the seed in the individual's mind. More often there is relief at being able to discuss openly a frightening preoccupation kept hidden from relations and friends.

There is no consensus on an 'acceptable' level of suicide. Some elderly people with no evidence of psychiatric disorder will kill themselves and the influence of groups in favour of euthanasia may play a part in adding to this number. The use of antidepressant medication as a means of suicide would suggest that a percentage of those already established as depressed and at risk still succeed in taking their own life, but this has been shown to be only a small percentage.

Suicide in the elderly is known to have a strong association with depressive illness, which in turn presents more commonly in the elderly with somatic complaints and sleep disturbance. The fact that potentially suicidal patients are presenting to their doctors is clear from the high levels of suicide from drugs available only on prescription. What is also clear is that the majority of the elderly are committing suicide using analgesics, hypnotics and multiple drug combinations. In the climate of an ever increasing elderly population the early recognition and treatment of depressive illness with the aim of decreasing a potentially preventable cause of death in a vulnerable population must be a high priority for all.

References


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