PROGNOSIS

Review: patients who have schizophrenia have increased mortality from all causes, natural causes, and unnatural causes


Question
What is the mortality rate in patients who have schizophrenia?

Data sources
Studies were identified by searching Medline and BIDS Gateway (1986–96) and scanning the bibliographies of relevant studies.

Study selection
Studies were selected if they were cohort studies published in English or French, were peer reviewed, had > 100 patients, had ≥2 years of follow up, had ≥85% of patients complete the study follow up, and the number of observed and expected deaths could be calculated.

Data extraction
The number of observed and expected deaths were extracted.

Main results
Meta-analytical techniques were used. 18 studies (61 161 patients) met the inclusion criteria. 10 260 deaths occurred and 6788 deaths were expected. Aggregate standardised mortality ratios (SMRs) were calculated by dividing the sum of the observed deaths by the sum of the expected deaths (derived from matched cohorts of the general population) and multiplying the result by 100. All cause, unnatural cause, and natural cause mortality were increased for patients who had schizophrenia (table). Of the excess mortality, 59% was accounted for by deaths from natural causes and 41% by deaths from unnatural causes. For specific natural causes, increased occurred in deaths from cardiovascular disease (SMR 110, 95% CI 105 to 115), respiratory disease (SMR 226, CI 209 to 244), digestive diseases (SMR 185, CI 164 to 208), genitourinary disease (SMR 161, CI 137 to 180), and other diseases (SMR 168, CI 157 to 180). Patients with schizophrenia had decreased mortality from cerebrovascular disease (SMR 81, CI 73 to 87). No difference in the expected value existed for deaths from neoplastic disease, although men with schizophrenia had decreased mortality from neoplastic disease (SMR 86, CI 78 to 96). For deaths from unnatural causes, increases occurred for suicide (SMR 838, CI 784 to 894), which accounted for 28% of the excess mortality; accidents (SMR 216, CI 196 to 236), which accounted for 12% of the excess mortality; homicides (SMR 733, CI 636 to 1230), which accounted for 1% of the excess mortality; and deaths from undetermined causes (SMR 1450, CI 960 to 2130). Men with schizophrenia had higher all cause and unnatural cause mortality than women with schizophrenia (table). Men also had more deaths from suicides than women (SMR 956, CI 884 to 1051 v 673, CI 591 to 763).

Conclusions
Patients with schizophrenia have increased mortality from natural and unnatural causes. Suicide is the largest single cause of excess mortality for patients with schizophrenia.

Standardised mortality ratios (SMRs) for patients who have schizophrenia

<table>
<thead>
<tr>
<th>Cause of death</th>
<th>Overall SMR</th>
<th>95% CI</th>
<th>Men SMR</th>
<th>95% CI</th>
<th>Women SMR</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>All causes</td>
<td>151</td>
<td>148 to 154</td>
<td>148</td>
<td>144 to 152</td>
<td>139</td>
<td>134 to 144</td>
</tr>
<tr>
<td>Natural causes</td>
<td>134</td>
<td>131 to 137</td>
<td>125</td>
<td>118 to 128</td>
<td>125</td>
<td>120 to 130</td>
</tr>
<tr>
<td>Unnatural causes</td>
<td>426</td>
<td>402 to 451</td>
<td>508</td>
<td>471 to 546</td>
<td>345</td>
<td>310 to 382</td>
</tr>
</tbody>
</table>

Source of funding: National Health Service South and West Region.

For correspondence: Dr S Brown, Wolston Park Hospital, Wolston Park Road, Wacol, Queensland 4076, Australia. Fax +61 7 3271 1483.

Commentary

Suicide and premature natural or accidental death appear to share some risk factors. The review by Brown suggests that a diagnosis of schizophrenia is a proxy for some of the shared risk factors underlying these outcomes, in view of the excess of suicidal death on the one hand, and premature accidental and natural death on the other hand.

There is substantial geographical variation in the rate of premature death. If, compared with area A, the rate of suicide in area B is changed by the same amount in people without schizophrenia and in schizophrenic patients, the relative risk for suicide associated with schizophrenia will also vary between area A and area B. The risk for suicide in patients with schizophrenia is therefore dependent on the population base rate. The heterogeneity among the reviewed studies suggests that such mechanisms are at work.

Brown makes separate cases for the reduction of suicidal death and premature natural death. However, attempts to reduce excess premature natural death through a prevention programme in patients with schizophrenia may not necessarily reduce mortality even if the programme were 100% successful. Because of the aetiological continuity between suicide and other premature death, reduction of premature natural deaths may actually be replaced by accidental or suicidal deaths. Thus, instead of being selective, the intervention should focus on all adverse outcomes.

Brown highlights the need to identify high risk patients. Suicide can also be prevented, however, by reducing risk factors in the whole patient population regardless of risk status. Thus, clinicians who routinely provide treatment to help patients with schizophrenia cope with hopelessness and depression; never prescribe the more toxic antidepressants; and make sure that their patients are prescribed paracetamol only in small quantities, may make a substantial contribution to the reduction of suicide without ever specifically targeting high risk patients.

Jim van Os, MSc, PhD
Senior Lecturer in Psychiatric Epidemiology
University of Maastricht
Maastricht, the Netherlands

Review: patients who have schizophrenia have increased mortality from all causes, natural causes, and unnatural causes

_Evid Based Mental Health_ 1998 1: 91
doi: 10.1136/ebmh.1.3.91

Updated information and services can be found at:
http://ebmh.bmj.com/content/1/3/91

These include:

References
This article cites 3 articles, 1 of which you can access for free at:
http://ebmh.bmj.com/content/1/3/91#BIBL

Email alerting service
Receive free email alerts when new articles cite this article. Sign up in the box at the top right corner of the online article.

Topic Collections
Articles on similar topics can be found in the following collections

- Epidemiologic studies (630)
- Epidemiology (1567)
- Schizophrenia spectrum (429)
- Suicide (psychiatry) (228)
- Neurology (1067)

Notes

To request permissions go to:
http://group.bmj.com/group/rights-licensing/permissions

To order reprints go to:
http://journals.bmj.com/cgi/reprintform

To subscribe to BMJ go to:
http://group.bmj.com/subscribe/