LETTER TO THE EDITOR

Life Tables for People With Traumatic Brain Injury

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To the Editor:

Relatively little is known about long-term mortality of people with traumatic brain injury (TBI). Strauss et al. recently reported on the life expectancy of people with TBI, dividing patients into 3 groups on the basis of mobility. This provides a useful approximation but cannot take account of the patient's full profile of mobility, cognitive levels, time since injury, and so on. Such factors are known to be significant predictive factors for people with other disabilities.

Given a suitable database, it is possible to estimate a patient's mortality risk over the intermediate term, such as 10 years. This is standard practice for patients with spinal cord injury and with cerebral palsy. To obtain a life expectancy or a life table, however, we must estimate the patient's mortality risk over the entire life span. Here, we show how this may be done.

The source of data for the Figure is an expansion of the data used in our previous study. Exposure and mortality information from the first 2 postinjury years has been excluded, as mortality risk is known to be elevated during that period.

The vertical axis in the Figure is the logarithm of the relative risk, that is, the age-specific mortality risk for people with TBI relative to the general population (with the same proportions of men to women). The logarithm of the relative risks appear to decline linearly with age. The extrapolated line intersects the age axis at age 100. This is the parity age—the age at which the mortality rates among people with brain injuries and the general population become equal. The pattern is similar to that found previously for people with cerebral palsy.

To illustrate, consider a 30-year-old man with severe TBI. Suppose that a customized analysis estimates his current mortality risk to be 0.02 (roughly, this means a 2% chance of dying during the next 12 months). Because

![Graph]

Mortality rates for people in California with long-term disability resulting from traumatic brain injury. The graph shows the logarithm of the mortality risk relative to the general population plotted against age. According to the fitted line, parity (ie, a relative risk of 1) is reached at age 100. Vertical bars represent 80% confidence intervals.
the risk in the general population for a 30-year-old man is 0.002, the relative risk is 10.

Using the log-linear relationship with parity age 100, we calculated the mortality risk for ages 30 to 100. That is, the computed risks are such that the log-relative risk decreases linearly from log(10) at age 30 to log (1) = 0 at age 100. These age-specific risks were then used to construct a life (Table) in the standard way.8 According to the life table, the remaining life expectancy is 25.9 years. This may be compared with the general population, where a 30-year-old man has a life expectancy of 44.5 years.

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REFERENCES