Letter by Rutten-Jacobs and de Leeuw
Regarding Article, “Long-Term Mortality After First-Ever and Recurrent Stroke in Young Adults”

To the Editor:

We read with great interest the recent article by Aarnio et al1 on long-term mortality after young stroke. The authors studied long-term mortality after young stroke and compared mortality in the young stroke population with that in the general population, matched with age, sex, calendar year, and geographical area. Similar to a previous study from our group,2 they observed an increased long-term mortality compared with the general population, expressed as the standardized mortality ratio (SMR). Aarnio et al commented that the SMR observed in their study was remarkably 2× higher than in ours and that the reasons for this difference are unclear. In the following, we try to clarify this difference.

The expected number of deaths that is needed to calculate the SMR, is generally calculated using indirect standardization.3 In this method, the age, sex, and calendar-year–specific mortality rates in the reference population (general population) are weighted by the age, sex, and calendar-year structure of the study population. Therefore, when using indirect standardization, it can be problematic to compare SMRs between different study populations as each study population’s SMR is based on its own sets of weights determined by the age, sex, and calendar-year structure of the study population.3

Furthermore, there seems to be a difference between the 2 studies in the used calculation of the expected number of deaths. In our study,2 we matched the reference population to the study population on patient level, ensuring that the weighting is consistent, irrespectively of the subsequent division in subgroups. The data in Table 3 from the article by Aarnio et al suggest that the authors might have taken a somewhat different approach, as the sum of the expected number of deaths for subgroups of the population is not equal to the reported expected number of deaths for the total population, in contrast to the number of observed deaths. For example, the sum of the reported number of deaths for the 2 age categories, patients aged 15–39 years and patients aged 40–49 years is substantially lower than the reported number for the 2 age categories, patients aged 15–39 years and patients aged 40–49 years is substantially lower than the reported number for the 2 age categories, patients aged 15–39 years and patients aged 40–49 years.

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In the past, publications of both studies consistently showed much agreement in results on mortality and recurrent vascular events,2,4,5 emphasizing the similarities and meritorious robustness of both study designs. Also in the present article,1 the crude cumulative mortality at 16 years is similar to that observed in our study,2 whereas the difference in the magnitude of the SMR seems to be merely caused by a different standardization approach.

Disclosures

None.


References


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