Letters to the Editor

Number of Siblings and Risk of Hodgkin’s and Other Lymphoid Neoplasms

To the Editors: Having older siblings, in contrast to younger ones, is a surrogate marker of earlier exposure to common childhood pathogens (1). A Swedish case-control study reported a reduced risk of Hodgkin’s disease when subjects with three or more older siblings were compared with those without older siblings. No significant differences were found with younger and total number of siblings (2).

To provide further information on this topic, we report here findings from case-control study of lymphoid neoplasms conducted in northern Italy between 1983 and 1992 (3, 4). The study included 158 cases with histologically confirmed incident Hodgkin’s disease (ages 15-77 years, median 41), 437 with non-Hodgkin’s lymphoma (ages 15-79 years, median 58) and 141 with multiple myeloma (ages 38-79 years, median 63). Controls were 1,275 patients (ages 17-79 years, median 57) admitted for acute, non-neoplastic conditions (16% traumas, 28% other surgical, 35% surgical, and 21% other miscellaneous) to the same network of hospitals. Cases and controls were questioned by trained interviewers during their hospital stay. The proportion of refusals was <3%. Odds ratios (ORs) were estimated using unconditional multiple logistic regression, including terms for age, sex, study center, and level of education.

The number of older siblings was inversely related to the risk of Hodgkin’s disease. Compared with subjects with no older siblings, the multivariate OR was 0.87 for those with one, 0.63 for two, and 0.59 for three or more older siblings (Table 1). The inverse association was similar in various age groups: the OR for one older sibling was 0.82 for those aged 30-39 years, 0.79 at ages <40 years, 0.76 at ages 40-59 years, and 0.48 at ages ≥60 years. No association emerged between younger and total number of siblings and the risk of Hodgkin’s disease. Likewise, none of the other lymphoid neoplasms considered was associated with any measure of sibship size and order considered.

Our population had broadly different family sizes, as 58% of controls had three or more siblings compared with 6% in the Swedish study. Nonetheless, our study confirms that Hodgkin’s disease is inversely related to the number of older siblings. The absence of association with non-Hodgkin lymphoma and multiple myeloma indicates that this finding is not due to bias in the selection of controls. This supports the hypothesis that infections with (common) childhood pathogens, which are likely more frequent in individuals with more siblings and later birth order, may have a favorable impact on the risk of Hodgkin’s disease (5) but not on other lymphoid neoplasms.

Liliane Chatenoud
Silvano Gallus
Andrea Altieri
Eva Negri
Istituto di Ricerche Farmacologiche “Mario Negri”
Milan, Italy

Renato Talamin
Servizio di Epidemiologia e Biostatistica
Centro di Riferimento Oncologico
Aviano, Italy

Silvia Franceschi
IARC
Lyon, France

Carlo La Vecchia
Istituto di Statistica Medica e Biometria
Università degli Studi di Milano
Milan, Italy

References

Table 1. ORs and 95% confidence intervals of Hodgkin’s disease, non-Hodgkin’s lymphoma, and multiple myelomas according to number of older and younger siblings, Italy, 1983 to 1992

<table>
<thead>
<tr>
<th>Type of cancer</th>
<th>Older siblings</th>
<th>Younger siblings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Hodgkin’s disease (n = 154)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>n (%) cases</td>
<td>64</td>
<td>45</td>
</tr>
<tr>
<td>(95% confidence interval)</td>
<td>(0.57-1.33)</td>
<td>(0.36-1.12)</td>
</tr>
<tr>
<td>OR*</td>
<td>1.06</td>
<td>0.97</td>
</tr>
<tr>
<td>Non-Hodgkin’s lymphomas (n = 437)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>n (%) cases</td>
<td>133</td>
<td>112</td>
</tr>
<tr>
<td>(95% confidence interval)</td>
<td>(0.79-1.43)</td>
<td>(0.69-1.37)</td>
</tr>
<tr>
<td>OR*</td>
<td>1.06</td>
<td>0.97</td>
</tr>
<tr>
<td>Multiple myeloma (n = 136)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>n (%) cases</td>
<td>42</td>
<td>31</td>
</tr>
<tr>
<td>(95% confidence interval)</td>
<td>(0.59-1.59)</td>
<td>(0.38-1.48)</td>
</tr>
<tr>
<td>OR*</td>
<td>0.89</td>
<td>0.97</td>
</tr>
<tr>
<td>Controls (n = 1,275)</td>
<td>398</td>
<td>325</td>
</tr>
<tr>
<td>n (%)</td>
<td>31.2</td>
<td>25.5</td>
</tr>
</tbody>
</table>

OR* ORs adjusted for age, sex, study center, and education.
1 Reference category.
2 x2 for trend = 5.1, P = 0.02.
Number of Siblings and Risk of Hodgkin’s and Other Lymphoid Neoplasms

Liliane Chatenoud, Silvano Gallus, Andrea Altieri, et al.

Cancer Epidemiol Biomarkers Prev 2005;14:552.

Updated version
Access the most recent version of this article at:
http://cebp.aacrjournals.org/content/14/2/552

Cited articles
This article cites 4 articles, 1 of which you can access for free at:
http://cebp.aacrjournals.org/content/14/2/552.full#ref-list-1

Citing articles
This article has been cited by 5 HighWire-hosted articles. Access the articles at:
http://cebp.aacrjournals.org/content/14/2/552.full#related-urls

E-mail alerts
Sign up to receive free email-alerts related to this article or journal.

Reprints and Subscriptions
To order reprints of this article or to subscribe to the journal, contact the AACR Publications Department at pubs@aacr.org.

Permissions
To request permission to re-use all or part of this article, contact the AACR Publications Department at permissions@aacr.org.