Hi everyone, thanks all for weighing in on this.

I just had a look at Rosie’s draft tables of her MM manuscript to help clarify. I was not sure if she had reported individual results for glyphosate, but she has. Please note the results below are not adjusted for the medical history variables, and the tables/paper are undergoing revision now. I expect we will have a draft to review in the next few weeks and a paper could be submitted early in the new year or before.

Multiple Myeloma Analysis

Table 3 —Individual Pesticide Exposure

<table>
<thead>
<tr>
<th>Pesticide</th>
<th>Cases (%) (n=547)</th>
<th>Controls (%) (n=2700)</th>
<th>Adjusted OR¹ (95% CI)</th>
<th>Adjusted OR² (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glyphosate</td>
<td>No 502 (91.8) 2504 (92.7)</td>
<td>1.00</td>
<td>1.00</td>
<td>327 (91.9) 1771 (91.0)</td>
</tr>
<tr>
<td></td>
<td>Yes 45 (8.2) 196 (7.3)</td>
<td>1.19 (0.83-1.70)</td>
<td>1.23 (0.86-1.76)</td>
<td>29 (8.1) 174 (9.0)</td>
</tr>
</tbody>
</table>

¹ adjusted for age, and province/state of residence

Table 4—Years of Exposure to Select Individual Pesticides

<table>
<thead>
<tr>
<th>Pesticide</th>
<th>Cases (%) (n=547)</th>
<th>Controls (%) (n=2700)</th>
<th>Adjusted OR¹ (95% CI)</th>
<th>Adjusted OR² (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glyphosate</td>
<td>0 (unexposed) 502 (91.8) 2504 (92.7)</td>
<td>1.00</td>
<td>1.00</td>
<td>327 (91.9) 1771 (91.0)</td>
</tr>
<tr>
<td></td>
<td>&gt;0 and &lt;=4 31 (5.7) 113 (4.2)</td>
<td>1.32 (0.86-2.02)</td>
<td>1.36 (0.88-2.08)</td>
<td>18 (5.1) 106 (5.5)</td>
</tr>
<tr>
<td></td>
<td>&gt;4 14 (2.6) 83 (3.1)</td>
<td>0.97 (0.54-1.78)</td>
<td>1.01 (0.56-1.85)</td>
<td>11 (3.1) 68 (3.5)</td>
</tr>
<tr>
<td>OR per year</td>
<td>1.03 (0.69-1.70)</td>
<td>1.03 (0.69-1.70)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

¹ adjusted for age, and province/state of residence

Based in these analyses, we are not seeing elevated risks for MM. I doubt the medical history variables will change these results significantly. So, my suggestion to look at all cancers was premature and overlapping! Manisha, perhaps you could revise the protocol to look at NHL and HL? Also, we should incorporate the references to the previous Canadian CCSPH results as John suggests and any relevant US publications.

John, to be considered in the IARC evaluations, Aaron indicated a publication must be accepted (or possibly in press) at the time of the meeting (Aaron, I’m pulling you into this side conversation – can you please confirm?) In our call, we tried to identify some priority analyses we could conduct with a very short deadline and knowing there was a reasonable prevalence of exposure.

To answer your last question, Manisha will keep track of any approved NAPP projects in a spreadsheet/database (currently, only Rosie’s was approved by the EC) and I believe she had plans to keep these posted on the OCRC website so that we don’t have overlapping requests.

Thoughts from the group are appreciated.
Shelley
Sorry to be late to the discussion. It's been a hectic time.

I'm also a little behind since I couldn't attend the lunch meeting. I'm a bit confused as to the purpose of the analysis and the deadline. From the minutes it seems that the purpose is to have something to submit to the IARC monograph Panel meeting next year, but the discussion seems to be about a manuscript. Does a manuscript have to be submitted or does the Panel also consider unpublished analyses?

The Canadian study found an OR of 1.26 for glyphosate and NHL and 1.22 for MM, both non-significant. Both of these results have been published and will be available to the Panel. They would also have access to any published results from the US studies. (Manisha, do you know whether there any published results from the US studies on glyphosate?)

I was surprised that no results from any of the individual studies were included in Manisha's proposal, regardless. (I'm pretty sure I made the same comment on Rosie's proposal as well.)

All that said, I have no objections to pursuing this topic as it fits within the goal of NAPP. The only issue in my mind is overlap.

Best,

John

PS: Is there a register of approved projects using NAPP?
I would appreciate hearing what Laura and John think though.

For the IARC evaluation, it would be most relevant to look at multiple cancers.

Thanks,
Shelley

From: Pahwa, Manisha
Sent: Monday, October 27, 2014 3:53 PM
To: [jspinell@hsph.harvard.edu], [Shelley@hsph.harvard.edu], [freemal@hsph.harvard.edu]
Subject: Proposal to analyze glyphosate exposure and NHL risk in NAPP

Hi John, Shelley, and Laura,

Happy Monday! I have prepared a research proposal for assessing glyphosate exposure and NHL risk in the NAPP. While we had discussed looking at glyphosate exposure and the risks of NHL, MM, and HL in the NAPP, I thought to start off with NHL since it has been identified as a priority cancer type in general and has the largest sample size compared to the other cancer types. A few other points:

* In the interest of time, I have only calculated sample size corresponding to a power level of 0.8 and not for any other power levels. I have also produced a table of power calculations based on the total number of NHL cases (N=1690).

* Also in the interest of time, I have attached the proposal without Table 1. I am working on Table 1 and will send it to you tomorrow.

* It would be great to hear your feedback on the scope of this project given the limited amount of time to work on it. Do you think it is reasonable, or should any part(s) be trimmed down?

Thanks very much for your thoughts.

Sincerely,
Manisha