Seasonal influenza vaccination in HIV infected and kidney transplant young patients:
Are serological markers really informative in yearly vaccinated immune-compromised individuals?

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Study design & patients’ characteristics at the enrollment

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Vertically HIV infected</th>
<th>Kidney Transplanted</th>
<th>Healthy Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of subjects</td>
<td>45</td>
<td>81</td>
<td>23</td>
</tr>
<tr>
<td>F/M No. [%]</td>
<td>28(62)/17(38)</td>
<td>26(32)/47(68)</td>
<td>20(87)/12(35)</td>
</tr>
<tr>
<td>Age [yr]</td>
<td>13.7 ± 6.2</td>
<td>17.0 ± 6.2</td>
<td>23.0 ± 9.8</td>
</tr>
<tr>
<td>Subjects previously vaccinated [H1N1] No. [%]</td>
<td>32(80)</td>
<td>78(96)</td>
<td>21(100)</td>
</tr>
<tr>
<td>Geometric Mean Titer [GMT] H1N1/H3N2/B at T0</td>
<td>243.6(225.9/57.3)</td>
<td>241.2(106.5/84.4)</td>
<td>91.1(102.3/31.2)</td>
</tr>
<tr>
<td>Geometric Mean Titer [GMT] H1N1/H3N2/B at T1</td>
<td>633.6(428.6/70.8)</td>
<td>404.3(317.3/119.3)</td>
<td>640.4(482.5/98.8)</td>
</tr>
<tr>
<td>Seroprotection at T0</td>
<td>87.7/70.8/10.8%</td>
<td>81.5/81.5/41.2%</td>
<td>56.5/56.5/31.3%</td>
</tr>
<tr>
<td>Seroprotection at T1</td>
<td>42.5/58.5/32%</td>
<td>95.1/100/31.5%</td>
<td>95.7/81.3/73.3%</td>
</tr>
</tbody>
</table>

The majority of patients results seroprotected at baseline

Waning of measles-specific memory B cell responses in vertically HIV infected children

The majority of patients results seroprotected at baseline
14/07/2014

Seroconversion rate is significantly lower in immunocompromised patients compared to age-matched healthy controls.


Antibody but not memory B-cell responses are tuned-down in vertically HIV infected children.

The speed of change: towards a discontinuity theory of immunity?

The H1N1 has continued to circulate each season since the 2009 pandemic and included in yearly flu vaccine.

Analyses on antibody and memory B-cell responses to H1N1 in HIV and kidney transplanted patients with respect to years of seasonal influenza vaccination

Conclusive remarks

- Evaluating response to seasonal influenza vaccination by serological markers may be misleading in such patients due to repeated immunization with similar strains.

- Performing B-cell ELISPOT as an additional tool to evaluate the modulation of strain-specific cellular response may be considered for these individuals at high risk of complications due to influenza infection.

- Design future studies possibly in the context of populations requiring yearly flu vaccination is desirable to standardize the B-ELISPOT for routine use.

- Identify a personalized vaccine schedule for yearly vaccinated immune-compromised individuals in terms of doses and vaccine composition.
Comparing the effects of vaccination in different settings of chronic immune activation

- Early treated patients generate and preserve antigen-specific memory B-cells
- 4 out of 81 patients showed an increase/development of donor specific antibodies after flu vaccination