Limited data are available regarding the predictive value of various symptoms for pediatric influenza illness. Past studies have shown that among unvaccinated febrile children suspected of having influenza, fever, cough, headache, and sore throat are predictive of influenza. Limited data exist for general respiratory illness, and no data exist for vaccinated children.

Methods

In 5 prospective studies of LAIV compared with placebo or TIV in children 6 months to 17 years of age, symptoms were collected for respiratory illnesses during 5- to 8-month surveillance periods. LAIV is approved for use in eligible children 2 years of age and older. Symptoms associated with positive influenza culture (odds ratio >1.0) were determined using logistic regression; significance was determined at a threshold of P<0.05.

Results

Study characteristics are presented in Table 1.

Table 1. Characteristics of Studies

<table>
<thead>
<tr>
<th>Study</th>
<th>Control</th>
<th>Number of Samples</th>
<th>Age Group</th>
<th>Predominant Strains</th>
<th>Influenza Seasons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Study 1</td>
<td>Placebo</td>
<td>4532</td>
<td>11–23 mo</td>
<td>A/H3N2 and B</td>
<td>2000–2003</td>
</tr>
<tr>
<td>Study 3</td>
<td>TIV</td>
<td>4060</td>
<td>6–71 mo</td>
<td>A/H3N2 and B</td>
<td>2002–2003</td>
</tr>
<tr>
<td>Study 4</td>
<td>TIV</td>
<td>16,206</td>
<td>6–99 mo</td>
<td>A/H3N2 and B</td>
<td>2004–2005</td>
</tr>
<tr>
<td>Study 5</td>
<td>TIV</td>
<td>2320</td>
<td>6–17 y</td>
<td>A/H3N2 and B</td>
<td>2002–2003</td>
</tr>
</tbody>
</table>

LAIV=live attenuated influenza vaccine.

Of the symptoms analyzed, cough, decreased activity, fever, headache, muscle aches, runny nose, and sore throat were found to be associated with positive influenza culture (Figure 1).

Conclusions

Consistent with previous studies among unvaccinated children, fever, cough, sore throat, and headache were most strongly associated with positive influenza culture. Similar results were seen among vaccinated older children. Among vaccinated younger children, fever, runny nose, and headache were most strongly associated with influenza. The association with fever was stronger for TIV vs LAIV recipients, consistent with previous observations of greater incidence of fever among TIV vs LAIV recipients who develop influenza despite vaccination.

References


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