Puberty-Menarche Age Link Weakening

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Associate Editor

Unlike girls born at the turn of the last century, young girls today increasingly show minimal correlation between onset of puberty and age at menarche, reported Dr. Frank Biro and his colleagues.

In their study, 541 black girls and 615 white girls, aged 9 years, were given annual exams over 10 years. At the start, 49% of the black girls and 77% of the white girls were prepubertal.

The participants, born in 1977 and 1978 and socioeconomically diverse, were recruited from public and parochial schools in Cincinnati, Richmond (California), and an HMO in Washington (J. Pediatr. 2006;148:234-40).

The onset of puberty was defined as “the age at areolar stage 2 or at pubic hair stage 2, whichever occurred earlier. Age of menarche was calculated from the date of birth to date of first menstrual period,” said Dr. Biro of Cincinnati Children’s Hospital Medical Center, and his colleagues.

At the end of the study only a moderate correlation was found between onset of puberty and age of menarche. The median age for onset of puberty for white girls was 10.2 years and a mean age at menarche was 12.6 years; for black girls, it was 9.6 years for onset of puberty and 12 years for age at menarche.

Participants completed puberty at a median age of 14.3 years for whites vs. 13.6 years for blacks. Blacks also had a significantly younger age for several other puberty parameters such as age at peak height velocity (11.5 years vs. 11.9 years for whites), end of puberty, defined as attainment of areolar 4/pubic hair 5 (13.6 years vs. 14.3 years for whites), and age at attainment of adult height (16.5 years vs. 17.1 years for whites).

The median interval between age at onset of puberty and start of menarche was 2.7 years for blacks and 2.5 years for whites.

Researchers contrasted their results to several earlier studies including a 1948 study by Dr. E. Reynolds and Dr. J. Wines that reported the age of menarche was 2.7 years for blacks and 2.5 years for whites.

“...in general, girls who develop menarche earlier, one can see menarche independent phenomena,” the investigators said.

Dr. Paul Kaplowitz, a pediatric endocrinologist at Children’s National Medical Center, Washington, was not surprised by the study’s results. “It confirms what many of us have seen, which is that there is a lot of variability in how rapidly different girls progress through puberty. Although in general, girls who develop breasts at an early age tend to reach menarche earlier, one can see menarche less than 2 or more than 4 years after the appearance of breasts,” he said in an interview.

It is this individuality that must be weighted alongside treatment options. “Some kids are more worrisome than others because the signs of puberty progress more rapidly,” said Dr. Kaplowitz. “If the only sign of puberty is a small amount of breast tissue or pubic hair, the [physician could] observe it for 4-8 months before deciding if it is necessary to refer to a specialist. If it is changing little over time and the growth rate is not rapid, it is unlikely that any treatment will be needed.”

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<table>
<thead>
<tr>
<th>NovoLog® Mix 70/30 dosing schedule</th>
<th>A1C &lt;7% (ADA goal)</th>
<th>A1C ≤6.5% (MAA, EFP)</th>
</tr>
</thead>
<tbody>
<tr>
<td>QD (dinner)</td>
<td>41%*</td>
<td>21%*</td>
</tr>
<tr>
<td>BID (breakfast, dinner)</td>
<td>70%*</td>
<td>52%*</td>
</tr>
<tr>
<td>TID (breakfast, lunch, dinner)</td>
<td>77%*</td>
<td>60%*</td>
</tr>
</tbody>
</table>

Total ITT (intent-to-treat) population 660/100

*Cumulative percent of patients achieving A1C goals.

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