Time interval between menarche and surgery for endometriosis is not correlated to endometriosis phenotype

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Pathogenesis of endometriosis

1. Retrograde menstruation
   Sampson’s theory

2. Vascular and lymphatic dissemination

3. Stem cells
1. Background

**Which is the relation between endometriosis and menstrual cycle characteristics?**

**The adolescent history may identify possible risk factors for endometriosis?**

**Age at first surgery may be a relevant parameter to delineate disease phenotype?**
1. Background

**Is early age at menarche a risk factor for endometriosis? A systematic review and meta-analysis of case-control studies**

Nnoaham K et al, Fertil Steril 2012

**Probability of 55% that a woman with endometriosis had earlier menarche**

**There is a small increased risk of endometriosis with early menarche**

- Early menarche, <11-12 years old, is associated with an increased risk of endometriosis
  - Cramer et al., 1986
  - Missmer et al., 2004
  - Matalliotakis et al., 2008
  - Treloar et al., 2010

- "Lack of association between early menarche and an increased risk of endometriosis"
  - Candiani et al., 1991
  - Parazzini et al., 1995
  - Signorello et al., 1997
  - Arumugam and Lim, 1997
  - Hemmings et al., 2004
To evaluate age of menarche and time interval between menarche and surgery and whether they could be associated with endometriosis phenotypes.
3. Materials and Methods

Inclusion criteria

1. Women under age < 42 years old
2. Surgical exploration by operative laparoscopy between for gynecological indication

Exclusion criteria

1. Malignant gynecological disease
2. Previous surgery for endometriosis
3. No informed consent
3. Materials and Methods

Personal history data were obtained by the surgeon before surgery, using a previously published structured questionnaire:

- demographic information
- medical and gynaecological history

Chapron C. et al, Fertil Steril 2011

- Early menarche was defined as age at menarche ≤ 12 years old
- Age of women corresponded to the age at first surgery
- The time interval between menarche and surgery was calculated as the differences of the previous values
3. Materials and Methods

Patients <42 years submitted to surgery
n=2430
Missing data n=10
Diagnosis on surgery
n=2420

Visual diagnosis of endometriosis
n=1220
No visual lesions of endometriosis
n=1200
Not eligible: no informed consent 
 n=97
Not eligible: no informed consent
n=43
No histological confirmation of endometriosis
n=194

Endometriosis group
n=1177
Previous surgery for endometriosis
n=316

Control group
n=1066
Previous surgery for endometriosis
n=37

Study group
n=667
Patients with severe dysmenorrhea (VAS ≥7)
n=384

DIE
n=286
OMA
n=218
SUP
n=163

DIE
n=202
OMA
n=107
SUP
n=75
Comparison between study and control group

<table>
<thead>
<tr>
<th></th>
<th>Study group (n=667)</th>
<th>Control group (n=1066)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age of menarche (y)</td>
<td>12,9 ± 1,6</td>
<td>12,9 ± 1,7</td>
<td>NS</td>
</tr>
<tr>
<td>Age of menarche ≤12 years (n, %)</td>
<td>256 (38,4)</td>
<td>443 (41,6)</td>
<td>NS</td>
</tr>
</tbody>
</table>
## Comparison between study and control group considering subgroups of endometriosis phenotype

<table>
<thead>
<tr>
<th></th>
<th>SUP</th>
<th>OMA</th>
<th>DIE</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age of menarche (y)</strong></td>
<td>13.0 ± 1.7</td>
<td>12.9 ± 1.5</td>
<td>12.9 ± 1.5</td>
<td>NS</td>
</tr>
<tr>
<td><strong>Time between menarche and surgery (y)</strong></td>
<td>17.2 ± 5.7</td>
<td>18.3 ± 5.7</td>
<td>18.0 ± 5.1</td>
<td>NS</td>
</tr>
<tr>
<td><strong>Age of menarche ≤ 12 years (n,%)</strong></td>
<td>58 (35.6)</td>
<td>84 (38.5)</td>
<td>114 (39.9)</td>
<td>NS</td>
</tr>
</tbody>
</table>
### 4. Results

**Comparison between patients with endometriosis complaining or not complaining severe dysmenorrhea (VAS ≥7)**

<table>
<thead>
<tr>
<th></th>
<th>Patients without severe dysmenorrhea</th>
<th>Patients with severe dysmenorrhea</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age of menarche (y)</td>
<td>12.9 ± 1.4</td>
<td>12.9 ± 1.7</td>
<td>NS</td>
</tr>
<tr>
<td>Age of menarche ≤12 years (n, %)</td>
<td>104 (36.7)</td>
<td>151 (39.4)</td>
<td>NS</td>
</tr>
<tr>
<td>Years between menarche and surgery (y)</td>
<td>18.9 ± 5.2</td>
<td>17.2 ± 5.5</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>
4. Results

Comparison between patients with endometriosis complaining severe dysmenorrhea (VAS ≥7) considering subgroups of endometriosis phenotype

<table>
<thead>
<tr>
<th></th>
<th>SUP</th>
<th>OMA</th>
<th>DIE</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age at menarche</td>
<td>12.9 ± 1.8</td>
<td>12.9 ± 1.7</td>
<td>12.9 ± 1.6</td>
<td>NS</td>
</tr>
<tr>
<td>Time between menarche and surgery (y)</td>
<td>15.5 ± 5.9</td>
<td>17.3 ± 5.6</td>
<td>17.8 ± 5.1</td>
<td>0.023</td>
</tr>
<tr>
<td>Age at menarche ≤ 12 years (n,%)</td>
<td>27 (36.0)</td>
<td>44 (41.5)</td>
<td>80 (39.6)</td>
<td>NS</td>
</tr>
</tbody>
</table>
5. Conclusions

1. Any difference of age at menarche nor time interval between menarche and surgery among women with histologically proven endometriosis, whatever the disease subtype.

2. In women with severe dysmenorrhea, although we did not find any difference in age at menarche according to disease subtype.

3. In women with severe dysmenorrhea we found a significant lower time interval between menarche and surgery for endometriosis in proven SUP than women with OMA or DIE.
Merci