Role of integrin expression in pathophysiology of endometriosis

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Integrins are important transmembrane proteins that provide cell-cell and cell-ECM interactions.

Integrins are cell adhesion molecules that undergo cell-specific dynamic changes during the normal menstrual cycle in the human endometrium. Moreover, that increased expression of integrins could play important role in implants formation and progression of disease.
Objective

Evaluation of expression of integrin α1, α4, α5, α6, β1 in eutopic and ectopic endometrium using MLPA
Endometrial biopsy from uterine cavity
Endometriotic peritoneal lesions.

Laparoscopy, hysteroscopy specimens

- Endometrial biopsy from uterine cavity
- Endometriotic peritoneal lesions.
72 woman

1 group – ENDOMETRIOSIS (46)

2 group - CONTROL (26)

1a Superficial endometriosis (17)

1b Endometrioma (18)

1c Deep infiltrative endometriosis (11)
Symptoms
<table>
<thead>
<tr>
<th>Localization of lesions</th>
<th>Group 1a (n=17)</th>
<th>Group 1b (n=18)</th>
<th>Group 1c (n=11)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pl. vesica uterina</td>
<td>2 (12%)</td>
<td>5 (28%)</td>
<td>1 (9%)</td>
</tr>
<tr>
<td>Cul-de-sac</td>
<td>15 (88%)</td>
<td>10 (56%)</td>
<td>8 (73%)</td>
</tr>
<tr>
<td>Broad ligament</td>
<td>1 (6%)</td>
<td>3 (17%)</td>
<td>2 (18%)</td>
</tr>
<tr>
<td>Fallopian tubes</td>
<td>2 (12%)</td>
<td>3 (17%)</td>
<td>2 (18%)</td>
</tr>
<tr>
<td>Utero-sacr lig Left</td>
<td>0 (0%)</td>
<td>8 (44%)</td>
<td>2 (18%)</td>
</tr>
<tr>
<td>Utero-sacr lig Right</td>
<td>0 (0%)</td>
<td>2 (11%)</td>
<td>1 (9%)</td>
</tr>
<tr>
<td>Utero-sacr lig R+L</td>
<td>0 (0%)</td>
<td>3 (17%)</td>
<td>3 (27%)</td>
</tr>
<tr>
<td>OMA Right</td>
<td>0 (0%)</td>
<td>5 (28%)</td>
<td>3 (27%)</td>
</tr>
<tr>
<td>OMA Left</td>
<td>0 (0%)</td>
<td>10 (56%)</td>
<td>2 (18%)</td>
</tr>
<tr>
<td>OMAs L+R</td>
<td>0 (0%)</td>
<td>3 (17%)</td>
<td>1 (9%)</td>
</tr>
<tr>
<td>Ureter</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
<td>3 (27%)</td>
</tr>
<tr>
<td>Rectum</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
<td>6 (55%)</td>
</tr>
<tr>
<td>Bladder</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
<td>1 (9%)</td>
</tr>
<tr>
<td>Vagina</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
<td>3 (27%)</td>
</tr>
</tbody>
</table>
Markers of adhesion

INTEGRIN ALPHA1 IN EUTOPIE ENDOMETRIUM

INTEGRIN ALPHA1 IN ECTOPIC ENDOMETRIUM
Markers of adhesion

INTEGRIN ALPHA4 IN EUTOPIC ENDOMETRIUM

INTEGRIN ALPHA4 IN ECTOPIC ENDOMETRIUM
Markers of adhesion

INTEGRIN ALPHA5 IN EUTOPIC ENDOMETRIUM

INTEGRIN ALPHA5 IN ECTOPIC ENDOMETRIUM
Markers of adhesion

INTEGRIN ALPHA6 IN EUTOPIE ENDOMETRIUM

INTEGRIN ALPHA6 IN ECTOPIE ENDOMETRIUM
Markers of adhesion (Mean ± 95 % CI)

INTEGRIN BETA1 IN EUTOPIC ENDOMETRIUM

INTEGRIN BETA1 IN ECTOPIC ENDOMETRIUM
Eutopic endometrium

Expression of Integrin alpha4, alpha 6 and pregnancy rate with patients in endometriosis (mean ± st.dev)

0 - no pregnancy
1 - pregnancy
Max. expression of Integrin alpha1 in groupe with endometriomas

High level of Integrin alpha5 in eutopic and ectopic endometrium among patients with superficial endometriosis

Level of Integrin alpha4 in eutopic endometrium higher in endometriosis groupe

Integrin alpha6 level in eutopic endometrium higher in groupe with endometriomas and DIE