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Abstract Topic: 29. Oocyte Biology
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Are you a fellow in training in an American Board of Obstetrics and Gynecology approved program leading to certification in Reproductive Endocrinology and Infertility? No
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Awards:
IRB Approval: The study material in this abstract has been approved by the local Institutional Review Board (IRB) if any human subjects or any human material was utilized.
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Accept Complete Responsibility: I accept complete responsibility for the data at the time of submission.

Title: RELATIONSHIP BETWEEN EXTENT OF CYTOSKELETON DAMAGE OF OOCYTES INCUBATED IN PF OF ENDOMETRIOSIS AND THE STAGE OF THE DISEASE AND DURATION OF INFERTILITY
Objective:

Our previous studies demonstrated that endometriosis may induce alterations in the cytoskeleton (microtubules and chromosomes). Our objective was to evaluate the relation between the degrees of damage of the cytoskeleton of oocytes incubated in PF of patients with endometriosis and the stage of the disease as well as the duration of infertility.

Design: Experimental prospective controlled study

Materials and Methods: PF was collected from patients with endometriosis and divided into: Group I = mild (stage 1 and 2) and group II = severe (stages 3 and 4). 400 mature metaphase II mouse oocytes were divided into three groups. Group I: 165 incubated in the PF of patients with endometriosis both mild and severe disease. Group II: 135 incubated in the PF of patients with tubal ligation (controls) Group III: 100 Oocytes incubated in plain human tubal fluid media (HTF). Oocytes were fixed in Formaldehyde 3 % followed by incubation with anti α-tubulin monoclonal antibody for microtubule staining and FITC labeled anti-mouse Ig G antibody. Propidium iodide was used for chromosomal staining. Microtubules and chromosomes were examined by confocal microscopy. Both microtubules and chromosomes were scored as:

1-2 = normal and 3-4 = abnormal.

Results: Oocytes that were incubated in PF of patients with endometriosis showed high grade of microtubules and chromosome damage compared to control. Percentage of abnormal microtubules/chromosome score were seen in endometriosis (68/64) vs. tubal ligation PF (24/19) and HTF (18/18) (p< 0.001 for all groups compared with control. The degree of damage for microtubules correlated with stage of the disease (r = 0.42; P<0.029) and duration of infertility (r = 0.46, p<0.001) and for chromosomes scores, for stage (r = 0.17; p<0.029) and duration (r = 0.20; P< 0.014, respectively)

<table>
<thead>
<tr>
<th>Scores</th>
<th>Control (Tubal ligation)</th>
<th>Control (HTF)</th>
<th>Endometriosis</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Microtubules (mean ± SD) % abnormal</td>
<td>2.07 ± 0.85 24%</td>
<td>1.95 ± 0.72 18%</td>
<td>2.81 ± 0.86 68%</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Chromosomes (mean ± SD) % abnormal</td>
<td>1.89 ± 0.82 19%</td>
<td>1.84 ± 0.75 18%</td>
<td>2.72 ± 0.72 64%</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

P<0.05 was significant between control and endometriosis group

Conclusions: Endometriosis damages microtubules as well as the chromosomes of metaphase II mouse oocytes, which may lead to poor oocyte quality. The degree of damage is correlated to the stage of the disease and the duration of infertility

Support: None

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