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The purpose of our study was comparison of the diagnostic value of chromosomal microarray analysis (CMA) and standard cytogenetic research in the analysis of abortive material from women with miscarriage in the first trimester of pregnancy.

A comparative analysis of the 2 diagnostic methods was based on the study of abortive material from 885 women. In the 1st group we included 632 women, whose products of conception were directed to CMA. The 2nd group comprised 253 women, whose material was directed to a cytogenetic study (karyotyping).

### INTRODUCTION

COMPARATIVE ANALYSIS OF KARYOTYPING AND CHROMOSOMAL MICROARRAY ANALYSIS FOR PRODUCTS OF CONCEPTION OBTAINED WITH MISCARRIAGE

**PhD. Kudryavtseva E.V., Prof. Kovalev V.V.**

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#### INTRODUCTION

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#### RESULTS

<table>
<thead>
<tr>
<th>Number of successful studies</th>
<th>CMA (N=632)</th>
<th>Karyotyping (N=253)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Success</td>
<td>585</td>
<td>92.6</td>
<td>210</td>
</tr>
<tr>
<td>Failure</td>
<td>47</td>
<td>7.4</td>
<td>43</td>
</tr>
</tbody>
</table>

#### Reasons for failure:
- Inability to identify genetic material
- Low quality material (due to violation of storage and transportation rules)
- Not enough material (for karyotyping only)
- Cultivation failures (for karyotyping only)

#### The frequency of chromosomal abnormalities

<table>
<thead>
<tr>
<th>Structural anomalies</th>
<th>CMA, N=585</th>
<th>Karyotyping, N=210</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Autosomal trisomy</td>
<td>196</td>
<td>33.5</td>
<td>60</td>
</tr>
<tr>
<td>Autosomal Monosomy</td>
<td>5</td>
<td>0.8</td>
<td>0</td>
</tr>
<tr>
<td>Numerical anomalies of sex chromosomes</td>
<td>49</td>
<td>8.4</td>
<td>16</td>
</tr>
<tr>
<td>Multiple aneuploidy</td>
<td>19</td>
<td>3.2</td>
<td>15</td>
</tr>
<tr>
<td>Triploidy</td>
<td>34</td>
<td>5.8</td>
<td>21</td>
</tr>
<tr>
<td>Tetraploidy</td>
<td>3</td>
<td>0.5</td>
<td>11</td>
</tr>
<tr>
<td>Structural anomalies</td>
<td>26</td>
<td>4.4</td>
<td>2</td>
</tr>
<tr>
<td>Norm</td>
<td>253</td>
<td>43.2</td>
<td>85</td>
</tr>
</tbody>
</table>

#### CONCLUSION

- The frequency of chromosomal abnormalities detected by both methods is about the same.
- In clinical practice it is possible to use both methods. Higher availability of CMA is due to the possibility of delayed diagnosis and transportation of material.
- The advantage of CMA is a higher number of successful analysis.
- When karyotyping, polyploidy is detected more often (which, however, may be an artifact), it is possible to detect balanced translocations.
- Structural reorganizations, including unbalanced translocations, which can be hereditary, are more often determined during the CMA.

#### REFERENCES


#### CONTACT

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