Original Article
Study on fetal reduction in multiple births

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Abstract: To compare the clinical effect of second trimester multifetal pregnancy reduction. Multifetal pregnant patients (n = 152) including triplets and quadruplets were assisted reproductive technology (ART) pregnancy. Surgical methods using transabdominal ultrasound-guided injection of potassium chloride fetal heart is carried out. Fetal reduction and control groups of 28 to 34 weeks of pregnancy birth rate was 6.2%, respectively (8/130) and 6.4% (9/140), the incidence of fetal growth inequality was 12.3% (16/130) and 11.4% (16/140), GDM incidence was 3.1% (4/130) and 2.1% (3/140), respectively, Hypertensive disorder complicating pregnancy (HDCP) incidence rate was 11.5% (15/130) and 8.6% (12/140), respectively, fetal reduction group and the control group, the difference was not statistically significant. Implementation of selective fetal reduction will reduce multiple pregnancy, there is a risk of miscarriage after master the surgery, surgery before 16 weeks of pregnancy, to a certain extent reduce the abortion rate.

Keywords: Fetal reduction, multiple births, abortion rate, risk

Introduction

Multiple pregnancy rates in China have recently increased, with the wide application of assisted reproductive technologies (ART) [1-8]. To avoid the increased incidence of abortion and premature labor associated with multiple pregnancies, multifetal pregnancy reduction (MFPR) was introduced. This procedure has been shown to be both safe and effective [9-18].

To reduce maternal complications of multiple pregnancies and improve pregnancy outcomes, second trimester multifetal pregnancy reduction has been widely used in clinical practice. Hospital for treatment of obstetric 2002-2012 three and four-fetal pregnancies 152 cases, after assisted reproductive technology (assisted reproductive technology, ART) pregnancy, respectively pregnancy 12 to 13+6 weeks (91 cases), pregnancy 14 to 15+6 weeks (32 cases), pregnancy 16 to 24+6 weeks (29 cases) underwent fetal reduction, in the control group, twin pregnancies after ART 150 cases. Surgical methods using transabdominal ultrasound-guided injection of potassium chloride fetal heart.

Methods

A retrospective analysis of records gestational age and birth weight, gestational diabetes (gestational diabetes mellitus, GDM) and gestational hypertension (hypertensive disorder complicating pregnancy, HDCP) incidence were observed.
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Results

Abortion rate

Group fetal reduction abortion rate (14.5%) was higher than control group (6.7%), the difference was statistically significant (P<0.05). Different gestational fetal reduction group, the pregnancy of 16 to 24+6 weeks fetal reduction group abortion rate (31.0%) is higher than the gestation of 12 to 13+6 weeks fetal reduction group (8.8%) and the control group (6.7%), the difference was statistically significant (P<0.05).

Table 1. Fetal reduction and control groups to compare the rate of abortion

<table>
<thead>
<tr>
<th>Groups</th>
<th>Number</th>
<th>Abortion Number</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fetal reduction group</td>
<td>152</td>
<td>22</td>
<td>14.5</td>
</tr>
<tr>
<td>12–13th weeks</td>
<td>91</td>
<td>8</td>
<td>8.8</td>
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<tr>
<td>14–15th weeks</td>
<td>32</td>
<td>5</td>
<td>15.6</td>
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<tr>
<td>16–24th weeks</td>
<td>29</td>
<td>9</td>
<td>31.0</td>
</tr>
<tr>
<td>Control group</td>
<td>150</td>
<td>10</td>
<td>6.7</td>
</tr>
<tr>
<td>χ²</td>
<td>4.857</td>
<td></td>
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<tr>
<td>P</td>
<td>0.028</td>
<td></td>
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</table>

Note: *combination denominated fetal reduction compared with control group; †compared with 12 to 13+6 weeks fetal reduction group (χ² = 7.212, P = 0.007); ‡compared with control group (χ² = 12.749, P = 0.000).

Values were expressed as mean ± standard deviation (SD) since data were normally distributed. For continuous data, multiple comparisons were made using one-way analysis of variance (ANOVA), and for categorical data, we used χ² test. Statistical analyses were performed with the Statistical Package for Social Sciences (version 13.0; SPSS, Chicago, IL). A p-value of <0.05 was considered to be statistically significant.

Birth weight

A heavy weight child birth weight, B light-weight child birth weight, fetal growth and inequality, the three indicators of fetal reduction group and the control group, the difference was not statistically significance (P>0.05). Pregnancy 12–13th, 14–15th, 16 to 24th weeks fetal reduction group compared with the control group, birth weight A (t = -0.791, 1.308 and -0.170), birth weight B (t = -0.737, 1.198 and -0.129) and the incidence of fetal growth uneven (χ² = 0.174, 0.491 and 0.009) differences are not statistically significant (P>0.05). The results are shown in Table 2.

The incidence of GDM and HDCP

Fetal reduction group and the control group, minus compare different gestational age, GDM and HDCP incidence was no significant difference (P>0.05) between the two groups. Pregnancy 12–13th, 14–15th, 16 to 24th weeks fetal reduction group compared with the control group, GDM incidence (χ² = 0.000, 0.000 and 0.000) and HDCP onset (χ² = 0.315, 0.003 and 0.263) differences are not statistically significant (P>0.05). The results are shown in Table 2.

Conclusions

The timing of fetal reduction surgery was postponed until the second trimester. The reduced fetal surgery in early pregnancy were usually selected, but in early pregnancy it is difficult to determine whether the defects in the fetus or not, embryo damage rate is higher, and the risk of infection through vaginal operation is higher. The second trimester fetal reduction does not increase the incidence of maternal and fetal complications, can effectively avoid early pregnancy fetal reduction surgery blindness, not only reduce the number of multiple pregnan-
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Table 2. Comparison of pregnancy outcomes and complications between the two groups after 28 weeks of pregnancy in the reduced group and the control group

A. | Groups | Number of births after 28 weeks of pregnancy | Average gestational age (X±s, week) | 28 to 34 weeks of pregnancy childbirth | Birth Weight (X±s, g) | Number | Percentage (%) | A | B |
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<tr>
<td>Fetal reduction group</td>
<td>130</td>
<td>36.90±1.80</td>
<td>8</td>
<td>6.2</td>
<td>2720.42±455.04</td>
<td>2409.15±412.63</td>
<td>12~13+6 weeks</td>
<td>83</td>
<td>36.74±1.95</td>
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<td>Control group</td>
<td>140</td>
<td>36.97±1.82</td>
<td>9</td>
<td>6.4</td>
<td>2729.06±413.79</td>
<td>2416.21±436.79</td>
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<tr>
<td>t or χ²</td>
<td>4.857</td>
<td>0.009</td>
<td>0.163</td>
<td>-0.136</td>
<td>0.028</td>
<td>0.729</td>
<td>0.826</td>
<td>0.892</td>
<td>8.833</td>
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<tr>
<td>P</td>
<td>0.028</td>
<td>0.729</td>
<td>0.926</td>
<td>0.870</td>
<td>0.892</td>
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<tr>
<td>F or χ²</td>
<td>1.269</td>
<td>0.659</td>
<td>0.675</td>
<td>0.816</td>
<td>0.050</td>
<td>0.659</td>
<td>0.010</td>
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<tr>
<td>P</td>
<td>0.659</td>
<td>0.417</td>
<td>0.921</td>
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<td>B.</td>
<td>Groups</td>
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<td>HDCP</td>
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<td>Fetal reduction group</td>
<td>16</td>
<td>12.3</td>
<td>4</td>
<td>3.1</td>
<td>15</td>
<td>11.5</td>
<td>12~13+6 weeks</td>
<td>8</td>
<td>9.6</td>
</tr>
<tr>
<td>Control group</td>
<td>16</td>
<td>11.4</td>
<td>3</td>
<td>2.1</td>
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| Note: a means combination denominated fetal reduction compared with control group; b means minus fetal gestational age groups in different groups.

Disclosures of conflict of interest

None.

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[citations]


