and 2 of COH with recombinant FSH (rFSH), and Cetrorelix 0.25 mg/day was restarted when the leading follicle reached a mean diameter of 13 mm and continued to the day of hCG injection. Both groups were compared for an ovarian response to COH, IVF results and pregnancy outcome.

**Results:** There were no differences in age, body mass index (BMI), infertility duration, endocrine profile, or fasting and 2-hour glucose levels after a 75 gm glucose load between two groups. There were also no differences in the number of follicles ≥14 mm in diameter, or serum concentrations of estradiol and progesterone on the day of hCG injection between two groups. The number of retrieved oocytes, MII oocytes, and embryos transferred, and fertilization rate were similar in both groups. The ongoing pregnancy rate was also similar in both groups (33.3% versus 35.0%). However, total dose of rFSH required and days of rFSH injection were significantly lower in group 1 (P<0.01, P<0.05, respectively).

**Conclusions:** The use of GnRH antagonist during early and late COH period is as effective as GnRH agonist LP and could be cheaper alternative in COH of PCOS patients undergoing IVF-ET.

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**POSTER SESSION**

**ART, clinical, outcome**

**P-301 The relationship of zona pellucida thickness/zona pellucida thickness variation of human embryos and clinical pregnancy outcome following in vitro fertilization treatment**

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**Introduction:** To investigate the relationship of zona pellucida thickness/Zona Pellucida Thickness Variation of human embryos and clinical pregnancy outcome following in vitro fertilization treatment.

**Material and methods:** 246 embryos selected for transfer on day 3 with clear image record from 81 IVF-ET cycles of Reproductive Medical Center in the First Affiliated Hospital of Zhengzhou University of China during a five-month period from April 2002 to August 2002. The laser system measurement software is used to measure the ZTP of the embryo and the ZPTV were calculated.

**Results:** (1) Both ZPT and ZPTV declined with women’s age. The ZPTV value of embryos come from the patients between 30and 34 years old is significantly higher than the value of embryos come from the patients older than 35 years old (12.23± 4.78%)(P<0.001). (2) The ZPT for conceptual cycles and nonconceptual cycles were 16.71 ± 2.10um and 17.06 ± 1.75um, there was no statistic significance between the two groups, P>0.05. The ZPTV for conceptual cycles and nonconceptual cycles were 21.73 ± 5.61% and 18.61 ± 4.90%, the differences had statistic significance, P<0.005. The clinical pregnancy rate of mean ZPTV value more than 20% group and less than 20% group were 50.0% and 17.1%, the differences between the two groups had statistic significance, P<0.05. The ZPT for conceptual cycles and nonconceptual cycles were 13.3% and 17.1%, there was no statistic significance between the two groups, P>0.05. The ZPTV of the two groups were 19.71 ± 5.39% and 16.60 ± 5.42%, respectively, The differences between the two groups had statistic significance, P<0.001.

**Conclusions:** ZPTV rather than ZPT is a reliable parameter to evaluate the embryo quality, embryos with better scores had higher ZPTV values, and the patients more than thirty-five years old had lower ZPTV values. ZPTV exhibits a strong correlation with clinical pregnancy. The patients transferred with the embryos with ZPTV more than 20% had significantly improved pregnancy rate. These suggest that we should choose those embryos with ZPTV more than 20% for embryo transfer, and we may increase the ZPTV artificially by zona local thinning in order to enhance their implantation potential.

**P-302 Concerns about IVF: increased incidence of small-for-gestational-age neonates**

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**Introduction:** Infants born SGA display a reduced cognitive capacity at young adult age compared with controls. However, this lower capacity is not considered sufficiently severe to affect educational level or social adjustment.
Being born small for gestational age is associated with increased risk of sub-normal capacity in all four dimensions (logical, spatial, theoretical and verbal capacity) of intellectual performance. SGA status seems to have only modest independent effects on learning, cognition, and attention in adolescence. Severity but not symmetry of growth restriction predicted learning difficulties. The obstetric risks of pregnancies after in-vitro fertilization (IVF-ET) are related to the higher rate of multiplicity, previous infertility, primiparity over 35 and the technique itself. The aim of the study was to evaluate the frequency of small-for-gestational-age (SGA) neonates in singleton, twin and trigemini pregnancies following IVF-ET compared to matched control groups and the national incidence.

Methods: 13543 deliveries at the Department of Obstetrics and Gynecology, University of Szeged (tertiary referral center), between January 1, 1995 and March 1, 2002 were subjected to retrospective analysis. The 234 (1.7%) pregnancies following IVF-ET (singleton:185, gemini:36, trigemini:13) were evaluated and matched with spontaneous pregnancies concerning age, parity, gravidity and previous obstetric outcome. The incidence of SGA neonates were evaluated and compared to the controls. Triplets were examined in crude distribution. Overall SGA incidence was compared to the hungarian national average.

Results: In our study, the incidence of SGA and premature delivery proved to be higher after IVF-ET, but without attaining the level of statistical difference if compared to the matched control. SGA incidence in singleton IVF-ET group was: 8.1% versus 4.3% among spontaneous matched controls (statistically not significant; OR; 95% CI:1.95) and 30.6% (IVF-ET) versus 30.6% (matched control) in twin pregnancies. Triplets with 43.6% incidence of SGA further prove the evidence of extremely increased neonatal risk of multiple deliveries. Summing up the overall incidence (18.24%) in the IVF-ET group compared to the Hungarian National Database (8.6%) indicates the harmful effects of multiple pregnancies on the incidence of SGA.

Conclusions: The rate of triplet pregnancies following IVF-ET should be minimized in view of the significantly higher risk as concerns SGA. Twin pregnancies though not differing from spontaneous counterparts also have seriously increased rate of SGA. Singleton deliveries following IVF-ET are statistically not increasing the rate of the SGA. The leading quest for infertility experts should be further reducing the rate of multiple pregnancies following IVF-ET.

P-303 Implications of sperm chromatin immaturity detected by Aniline Blue (AB) staining in the results of Intracytoplasmic Sperm Injection (ICSI) outcome

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Aniline Blue (AB) staining in the results of Intracytoplasmic Sperm Injection (ICSI) procedure. Conventional AB staining was done in the same sample used to performed ICSI procedure.

Results: Results are presented in Table I.

Conclusion: Chromatine condensation assessed by AB did not show any correlation with the parameters studied in this work despite AB test has demonstrated a good correlation with chromatine immaturity determined by TEM (r: 0.51, p<0.005) (unpublished data).

Table I. Results of ICSI outcome according to AB cut off

<table>
<thead>
<tr>
<th>No. of cases</th>
<th>≥70% of untargeted</th>
<th>&lt;70% of untargeted</th>
<th>p value</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>sperm cells</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female age (mean ± SD)</td>
<td>34.2 ± 3.6</td>
<td>35.5 ± 3.7</td>
<td>ns</td>
</tr>
<tr>
<td>No. of oocytes recovered (mean ± SD)</td>
<td>9.8 ± 7.5</td>
<td>10.1 ± 7.2</td>
<td>ns</td>
</tr>
<tr>
<td>Normal fertilization rate (%)</td>
<td>76.1</td>
<td>71.0</td>
<td>ns</td>
</tr>
<tr>
<td>Embryo cleavage (%)</td>
<td>91.8</td>
<td>87.2</td>
<td>ns</td>
</tr>
<tr>
<td>No. of transferred embryos (mean ± SD)</td>
<td>2.4 ± 0.8</td>
<td>2.6 ± 0.8</td>
<td>ns</td>
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<tr>
<td>Clinical pregnancy rate (%)</td>
<td>34.8</td>
<td>35.1</td>
<td>ns</td>
</tr>
<tr>
<td>Implantation rate (%)</td>
<td>19.8</td>
<td>16.4</td>
<td>ns</td>
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<tr>
<td>First trimester miscarriage rate (%)</td>
<td>0</td>
<td>0</td>
<td>ns</td>
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</tbody>
</table>

ns: not significant

P-304 The outcome of IVF/ICSI in infertile patients with antiphospholipid antibodies

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Introduction: Antiphospholipid antibodies (APA) are associated with recurrent pregnancy loss (RPL), intrauterine growth retardation (IUGR), placental abruption, pregnancy induced hypertension. Recently it has been displayed that in addition to RPL, other reproductive processes such as unexplained infertility and in-vitro-fertilization failure (IVF) might be related with APA. In our blinded study we determine an association between the presence of IVF with the IVP and pregnancy outcome.

Material and methods: From 128 patients with infertility who were tested on APA, 102 women underwent IVF treatment. Patients were not older than 40, did not have any somatic pathology; in case of male infertility we performed ICSI. A protocol of ovarian stimulation as well as luteal phase support was standard. Sera was collected on the 19-21 day of the cycle before the beginning of IVF treatment. Samples for immunoglobulin IgG anticardiolipin (aCL), antiphosphatidylserine (aPS) and antiphosphatidylethanolamine (aPE) antibodies were analyzed by enzyme-linked immunosorbent assays. Additionally levels of aCL and aPS antibodies were calculated according to calibrators from the Antiphospholipid Standardization Laboratory in GPL units.

Results: 32.8% (42/128), 27.3% (35/128) 25.9% (14/54) women were positive for aCL, aPS and aPE antibodies respectively. In IVF/ET patients (n = 102) APA were detected in 42 (APA positive group I), and they were not detected in 60 patients (APA negative group II). There was no significant difference between groups in age, IVF protocol, percentage of ICSI cases, number of transferred embryos, number of IVF attempts, clinical infertility diagnosis. The main duration of infertility was more than 7.5 years and percentage of tubal infertility – 65.6%. We found significant difference in pregnancy rate between groups. Pregnancy occurred in 26.1% (11/42) in APA positive I group and 46.6% (28/60) in APA negative group II (p<0.05). Among those who became pregnant miscarriage occurred in 3 from 11 APA positive and 4 from 28 APA negative women. The birth rate per IVF cycles were significantly different between 19% (8/42) APA positive group I and 40% (24/60) APA negative group II (p<0.05). Additionally mean levels of aCL and aPS antibodies were significantly lower in women who became pregnant: 6.9 and 6.52 GPL compared to 12.46 and 9.2 GPL in women with IVF-failure (p<0.05).

Conclusion: Our data show decrease of IVF/ICSI success rate as well as birth rate in APA positive women. We suggested that APA may be one of the reason of IVF failure in infertile patients.

P-305 Day-14 serum progesterone levels strongly predict IVF/ICSI outcome

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Introduction: Serum progesterone has been advocated as a tool in the diagnosis of early pregnancy failure. We conducted this prospective study in order to determine whether an early single serum progesterone measurement, fourteen days after oocyte recovery, can predict pregnancy outcome following superovulation for in vitro fertilisation (IVF) or intra-cytoplasmic sperm injection (ICSI).
Materials and methods: 448 women, consecutively treated by IVF or ICSI had serum progesterone levels prospectively measured fourteen days after oocyte retrieval (day 0). All women received progesterone 400mg rectally until the pregnancy test on day 14. Pregnant women were followed up by serial transvaginal ultrasound scans to 8 weeks gestation.

Results: Six women lost on follow up were excluded. The clinical pregnancy rate was 31.5%. 115 women (26%) had a viable intrauterine pregnancy at 8 weeks gestation, 80 (18.1%) had an abnormal pregnancy (biochemical, ectopic, miscarriage) and 247 (55.9%) failed to conceive. Women with ongoing pregnancies had significantly higher serum progesterone levels (median = 430 nmol/L) compared to those who had either an abnormal pregnancy (72 nmol/L; p<0.001) or failed to conceive (33 nmol/L; p=0.001). Receiver-operator curve analysis demonstrated that a single serum progesterone on day 14 post oocyte retrieval had high diagnostic accuracy for differentiating between normal and abnormal pregnancies (area under the curve = 0.92, 95% CI = 0.89 - 0.96; p<0.001). Using a cut-off of 103 nmol/L, the test has a sensitivity of 83.5% and a specificity of 83.7%.

Conclusions: To the best of our knowledge this is the first prospective report assessing the potential value of serum progesterone measurement in women undergoing IVF/ICSI and receiving rectal progesterone supplements. In spite of exogenous progesterone supplementation, serum progesterone levels were significantly elevated, from as early as 4 weeks gestation (day 14 post-oocyte retrieval), in women with on-going intrauterine pregnancies. Single serum progesterone measurement could be a useful indicator of pregnancy outcome in women undergoing IVF or ICSI treatment.

P-306 Chlamydia heat shock protein 60 in IVF patients

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Introduction: Heat shock proteins (HSP) are among the first proteins produced during mammalian embryo growth. They are suspected to be important for implantation and development of the embryo. In patients with Chlamydia trachomatis infection, antibodies against the chlamydial heat shock protein 60 (c-HSP60) can develop which may cross-react with human HSPs (h-HSP) due to an aminoacid homology of about 50%. Thus, we hypothesized, that pregnancy loss after IVF frequently may be caused by a c-HSP induced autoimmune response to human HSPs associated with human HSPs (h-HSP) due to an aminoacid homology of about 50%. Thus, we hypothesized, that pregnancy loss after IVF frequently may be caused by a c-HSP induced autoimmune response to human HSPs associated with elevated antibody titer against c-HSP60 and h-HSP.

Materials and methods: In 105 pregnant IVF patients antibody titer against c-HSP60, h-HSP and the chlamydial major outer membrane protein (MOMP) were determined (pELISA, medac) and a cut-off index proportional to antibody titer was calculated. In 49 patients pregnancy ended in a biochemical pregnancy or in an early clinical miscarriage. In 56 patients a healthy baby was born.

Results: 8% of the IVF patients with pregnancy loss and 5% with healthy babies had a c-HSP index greater than 4 (not significant). There were no differences in antibody indices against h-HSP and MOMP between both groups.

Conclusion: Recent studies indicate an association between a previous Chlamydia infection, an immune response to HSPs and reproductive failure. In the present study we could not confirm an association between pregnancy loss and elevated immune responses to c-HSP or h-HSP, although we found a non significant trend to increased anti-c-HSP titer in patients with pregnancy loss. Further studies with a greater number of patients including patients with ectopic pregnancy are on the way.

P-307 Sustained IVF success while reducing high order multiples

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Introduction: One of the major complications of IVF (In Vitro Fertilization) is multiple pregnancy - particularly higher order multiples (triplets or greater). To reduce the chance of multiple pregnancies and ultimately births, fewer embryos must be transferred to the patient. The challenging consumer environment in the United States places the burden of cost on the patient and may be a factor in the reluctance of US IVF centers to reduce numbers of embryos transferred. In contrast, many countries in Europe have legislation governing the number of embryos transferred and some centers are successfully moving in the direction of single embryo transfers for patients. Our IVF team goal in 1999 was to specifically reduce the high order multiple live birth rate while maintaining overall IVF live birth rates.

Materials and methods: During the evaluation period (1999-2002), the team modified embryo culture and grading systems, clinical patient treatment protocols and selection and transfer strategies to maximize the live birth rate for each retrieval while transferring fewer high quality embryos. Specifically, we began individual embryo culture, adopted sequential culture media, refined pronuclear grading and multinucleation selection for embryos and deselected surplus embryos prior to transfer while still freezing the majority of embryos from each cohort at pronuclear stages during fresh cycles. When all consecutive fresh retrieval cycles were completed and outcomes received, we conducted a retrospective review of transfers (n=823) and outcomes from the IVF database.

Results: Between 1999 and 2002, the average number of embryos transferred to each patient declined from 3.0 to 2.4. As a proportion of all transfers, we achieved a decrease in 3 embryo transfers (45.9% to 29.7%), a 3-fold decrease in 4 embryo transfers (20.2% to 6.6%) and a 3-fold increase (18.6% to 61.3%) in 2 embryo transfers. As the average number of embryos transferred declined, we saw a 3-fold reduction in the proportion of higher order live births (7.5% to 2.1%). By the end of the evaluation period live birth rate per retrieval (47.1% to 44.8%) and embryo implantation rates (27.4% to 30.6%) recovered despite the lower numbers of embryos transferred.

Conclusions: During the evaluation period, we saw a continual reduction in the average number of embryos transferred to each patient, a corresponding decline in the number of high order multiples, and a live birth rate that remained consistently above the national average. Even in a challenging consumer environment such as a private medical center in the United States it is possible to reduce the numbers of embryos transferred and hence the multiple live birth rates while maintaining respectable live birth rates overall.

P-308 Does DNA fragmentation in spermatozoa affect ICSI offspring development?

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Introduction: Concerns have resurfaced regarding the well-being of children born after assisted reproductive technologies. These qualms are more specifically related to the possibility of gene defects, whether linked to imprinting patterns or to gene mutations. These putative problems have been attributed to the in vitro culture systems or the insemination method utilized, and particularly to the characteristics of the gametes. For instance, men with compromised spermatogenesis are known to have a higher incidence of sperm chromosomal abnormalities and high levels of DNA fragmentation. An increased DNA fragmentation index (DFI) of >30% or equal, is considered an abnormal level (Larson-Cook et al., 2003). In the present study, attempts have been made to assess whether the use of semen samples with a high DFI index has any bearing on the development of ICSI children.

Materials and methods: Semen samples were subjected to a conventional analysis as well as sperm chromatin structure assay. The children were given an IQ examination by the WPPSI-R, a motor development by the PDMS, and a physical examination for congenital abnormalities was conducted by a pediatrician/geneticist. In the IQ test, scores of 90 to 109 were considered average for the age group. Parents also completed the SSRS, to assess the positive behavior of the child.

Results: Children (n =29) were analyzed according to the degree of sperm fragmentation (high/abnormal vs low/normal). There were 14 deliveries (15 liveborns, 1 set of twins) and 15 deliveries (15 liveborns) in the abnormal and normal group, respectively. The mode of delivery in the abnormal DFI group was normal vaginal birth, whereas in the normal DFI group, there were eight vaginal, 1 vacuum assist, and five c-sections with no difference in gestational age, and were similar in birth weight in the two
groups. Two neonates in the normal group were admitted to the NICU, the first for a pneumothorax and the second a Tetrology of Fallot. With regard to their general health, no chronic illness was observed except for one child treated for 2 months with antibiotics for an isolated IgA deficiency. A total of 12 children in the abnormal DFI and 11 in the normal DFI group all had normal peripheral karyotypes, there being one major malformation in each. On psychological evaluation, both groups had a high average overall IQ (113.1 ± 15 vs 114.2 ± 18). With the PDMS, the gross and fine motor skills of the children were appropriate for their age. Finally, children were found to be developing normally with respect to the social and behavioral skills.

**Conclusions:** A high level DNA fragmentation index in the semen of fathers with severe male infertility did not affect the pregnancy outcome, physical development, and psychological status of children generated by ICSI. Despite a high parental age in the high DFI group, there was no increase in chromosomal abnormalities in the offspring and psychological, motor as well as behavioral development were similar in both categories.

**P-309** Is there a paternal influence on ICSI outcomes of patients with azoospermia?


**Introduction:** Parameters determined by the female partner such as age and ovarian reserve make a significant contribution to the success of ICSI in patients with obstructive and non-obstructive azoospermia (OA and NOA). Moreover, the innate characteristics of the injected sperm may also be related to the etiology of azoospermia and ICSI results. In this study, we aimed to examine the effects of testicular sperm obtained by TESA and TESE from OA and NOA patients on ICSI success, controlling for female parameters (age and ovarian reserve) between the groups. ICSI results of OA and NOA patients were compared to a third matched control group of NOA patients who had used donor sperm.

**Materials and methods:** Retrospective triple matched control study. Fifty-four NOA patients with at least one sperm cell injected into the oocytes of their female partners were retrospectively matched by age and number of retrieved oocytes of their female partners with 54 OA patients from the same period of treatment. ICSI results of both groups and another 54 NOA patients who had used donor sperm during the same period of treatment were compared to each other. Patients underwent ICSI and COH with leuprolide acetate long protocol and rFSH. The patients were divided retrospectively into six groups according to the inclusion criteria for female patients were: age <37 years, eumenorrhea, normal gonadotrophin levels and normal BMI.
From 1995 to 2003, 20 CF men were candidate to report a multidisciplinary approach of the advisability, management, and offer these patients the possibility of fathering. The aim of this study is to parenthood desire in young affected adults. Men are sterile by congenital and lowest in group V (16%) as well as miscarriage rate (highest in group III 21%) as well as miscarriage rate (highest in group III 21%) as well as miscarriage rate (highest in group III 21%) as well as miscarriage rate (highest in group III 21%) as well as miscarriage rate (highest in group III 21%) as well as miscarriage rate (highest in group III 21%) as well as miscarriage rate (highest in group III 21%) as well as miscarriage rate (highest in group III 21%) as well as miscarriage rate (highest in group III 21%) as well as miscarriage rate (highest in group III 21%) as well as miscarriage rate (highest in group III 21%) as well as miscarriage rate (highest in group III 21%) as well as miscarriage rate (highest in group III 21%) as well as miscarriage rate (highest in group III 21%) as well as miscarriage rate (highest in group III 21%) as well as miscarriage rate (highest in group III 21%) as well as miscarriage rate (highest in group III 21%) as well 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Conclusion: A significantly higher number of OCC’s is retrieved from patients with PCO appearance with comparable M-2 oocyte yield. The fertilization rate with ICSI is significantly lower in the PCO group. The PCO group produced less grade 2 but more grade 3 embryos. The PCO group had an increased risk of producing fragmented embryo compared to the control group. However, both clinical pregnancy rates per ET and implantation rates were comparable.

P-315 Obesity does not have an adverse effect on conception rates with ICSI
Hacettepe University, Obstetrics and Gynecology, Ankara, Turkey

Introduction: The aim of this study was to evaluate the impact of obesity on ICSI outcome.

Materials and methods: 333 consecutive ICSI cycles with embryo transfer (ET) were included. Freeze-thaw cycles, patients with irregular menstrual cycles, polycystic ovary appearance or polycystic ovary syndrome were excluded. Patients were categorized on the basis of body mass index (BMI): Group I (20-25 kg/m²; n=211), Group II (26-30 kg/m²; n=87), Group III (>30 kg/m²; n=35). Standard luteal-long leuprolide acetate with rFSH using the step-down protocol were employed. Standard culture conditions and fertilization rates, quality of day 3 embryos and pregnancy rates, however, are comparable. All groups were compared in respect to female age, number of oocytes collected, number of M2 oocytes inseminated, fertilization rates and number of embryos transferred between compared groups. In all groups G3 series of mediums were used following fertilization and during embryo development up to 5 days. Embryos selected for transfer were first replaced in either G2.3 medium or in Embryoglue before transfer and then transferred in 40 μL medium.

Results: Overall and different stage of transferred embryos results are given in Table 1.

Table 1

<table>
<thead>
<tr>
<th>Glue</th>
<th>N</th>
<th>Pregnancy (%)</th>
<th>Ongoing Pregnancy (%)</th>
<th>Implantation Rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glue overall</td>
<td>261</td>
<td>42.14</td>
<td>32.57</td>
<td>16.0</td>
</tr>
<tr>
<td>• 3 ET</td>
<td>67</td>
<td>35.8</td>
<td>28.36</td>
<td>15.13</td>
</tr>
<tr>
<td>• Day 4 ET</td>
<td>83</td>
<td>44.57</td>
<td>34.93</td>
<td>13.24</td>
</tr>
<tr>
<td>• Blastocyst ET</td>
<td>111</td>
<td>44.14</td>
<td>33.33</td>
<td>18.06</td>
</tr>
<tr>
<td>G2.3 overall</td>
<td>231</td>
<td>40.69</td>
<td>32.03</td>
<td>16.5</td>
</tr>
<tr>
<td>• 3 ET</td>
<td>44</td>
<td>31.81</td>
<td>20.45</td>
<td>11.57</td>
</tr>
<tr>
<td>• Day 4 ET</td>
<td>59</td>
<td>32.20</td>
<td>23.72</td>
<td>10.0</td>
</tr>
<tr>
<td>• Blastocyst ET</td>
<td>171</td>
<td>49.7</td>
<td>41.52</td>
<td>20.97</td>
</tr>
</tbody>
</table>

Results classified as patient prognosis are given in Table 2.

Table 2

<table>
<thead>
<tr>
<th>Glue</th>
<th>N</th>
<th>Pregnancy (%)</th>
<th>Ongoing Pregnancy (%)</th>
<th>Implantation Rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glue</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Good prognosis</td>
<td>110</td>
<td>59.09</td>
<td>48.18</td>
<td>20.89</td>
</tr>
<tr>
<td>• Poor prognosis</td>
<td>25</td>
<td>12</td>
<td>12</td>
<td>4.34</td>
</tr>
<tr>
<td>G2.3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Good prognosis</td>
<td>125</td>
<td>56.8</td>
<td>44</td>
<td>22.24</td>
</tr>
<tr>
<td>• Poor prognosis</td>
<td>23</td>
<td>8.7</td>
<td>8.7</td>
<td>4.16</td>
</tr>
</tbody>
</table>

All groups were compared in respect to transfer mediums (Embryoglue® and G2.3). No significant differences between the groups were detected (p>0.05).

Conclusions: Increased hyaluronan levels in the transfer medium does not help implantation with regard to the different stages of the embryos transferred and patient profile. This may be explained by the gap between the transfer day and the actual implantation time in vivo.

P-317 Embryo number and selection impact pregnancy and triplet rates
M.J. Hinrichsen1,2, C. Racowsky2
1 Deutsche Klinik Bad Muender, Centre for Reproductive Medicine, Bad Muender, Germany; 2 Harvard Medical School, Obstetrics and Gynecology, Boston, USA

Introduction: German ART regulations stipulate that no more than 3 embryos be held in culture for patients ≥35y and that all cultured embryos must be transferred. While this strategy effectively holds the triplet rate to <1.5% (DIR), pregnancy rates are undoubtedly compromised because advantages afforded by embryo selection at the cleavage stage are eliminated. Recent interpretation of the German Embryo Protection Law may allow for future embryo selection, therefore requiring further clarification of the relationships that exist among the number of embryos available for selection, and pregnancy and triplet rates. The present study was undertaken to test the hypothesis that the number of embryos available for selection not only impacts the pregnancy rate, but also impacts the triplet rate, when 3 embryos are transferred in women 35-39 years of age.

Materials and methods: Day 3 transfers performed in women 35-39y undergoing IVF with or without ICSI at Brigham and Women’s Hospital from January, 1998-October, 2003 were analyzed, stratifying those having only 3 embryos transferred (n=627) first by age (35-37y and 38-39y), and then by number of embryos available in the cohort (3 or 4, 5 to 8, 9 to 12, >12). Selection of embryos for transfer was conducted using standard morphological criteria on Day 3. Pregnancy (viable fetus at ≥8 weeks) and triplet rates were determined for each subgroup, and data analyzed statistically.
using Chi Square or Fisher’s Exact test, with p<0.05 considered significant. Conclusions regarding the optimum number of embryos to transfer were verified following further analysis of cycles in which only 2 embryos were transferred.

**Results:** For each age group, pregnancy rates were significantly increased in cycles having >4 embryos available as compared with those having 3 or 4 (35-37y: 52.1% vs. 35.3%; p=0.0007; 38-39y: 44.8% vs. 23.1%; p=0.006). Although statistically insignificant, triplet rates were also increased with increasing numbers of embryos available, with the breakpoint also being >4 embryos for the 35-37y olds (1.7% vs. 8.2% triplets, for 3 or 4 vs. >4 embryos available; p=0.152), but >8 embryos for the 38-39y olds (0% vs. 7.1% triplets, for ≤8 vs. >8 embryos available; p=0.264). These data suggested that only 2 embryos should be transferred when >4 embryos are available for patients 35-37y, but that >8 embryos should be available for women 38-39y. Further analyses of cycles fulfilling these criteria (n=89) but with only 2 embryos transferred revealed no significant decreases in pregnancy rate but complete elimination of triplets.

**Conclusions:** In patients 35-39y, implementation of embryo selection by morphological criteria on Day 3, combined with consideration of the number of embryos available in the cohort, allows identification of the optimum number of embryos to transfer so as to minimize the risk of triplets without compromising pregnancy rates.

**P-318 Comparison between two different preparations of vaginal progesterone for luteal phase support in assisted reproduction treatment**

S. Geber, A.C.F. Moreira, S. de Paula, B. Veado, M.A.C. Sampaio

**ORIGEN -Center for Reproductive Medicine, Assisted Reproduction, Belo Horizonte - MG, Brazil**

**Introduction:** The administration of progesterone for luteal phase support in assisted reproduction treatment cycles using GnRHa for pituitary suppression, has been routinely used in the majority of the assisted reproduction centers. It’s been given in order to assist corpus luteum that may have been compromised during ovulation induction or oocyte retrieval. Moreover, it is clear that luteal phase support has a positive effect on the pregnancy outcome. It can be administered orally, intramuscularly, or vaginally and the latter can be used in different formulations. However, it is still not clear which one is the most effective.

**Objective** This study was performed to compare the efficacy of two different preparations of vaginal progesterone for luteal phase support in patients submitted to assisted reproduction treatment using GnRHa analogs.

**Material and methods:** A total of 244 patients submitted to infertility treatment with assisted reproduction techniques were included in our study. Patients were randomly allocated in two groups according to the luteal phase support they used. Patients in group 1 received vaginal micronized progesterone capsules (Utrogestan), 200 mg 3 times a day. In group 2, patients received vaginal micronized progesterone gel (Crinone 8%) containing 90 mg once a day. All patients had depot GnRHa long protocol for pituitary suppression and the same superovulation protocol. Patients started the use of progesterone at day 1 after oocyte retrieval and continued its for 13 days when pregnancy test was performed. We compared the groups according to age, cause of infertility, number of transferred embryos and pregnancy rate.

**Results:** Both groups had 122 patients. The cause of infertility was similar in both groups. The mean age in group 1 was 34.8 (range 21-41), the mean FSH level 8.4±3.1 (range 3.6-9.8), and the mean number of embryo transferred was 1.86±0.95. With ICSI, we obtained 9 clinical pregnancies (assessed by ultrasonography), and 36 (13.8% pc) ongoing pregnancies (> 12 WG). Among pregnant patients, the mean age was 34.6±3.3, the FSH level 7.5±3.2. An average of 3.2 cycles were necessary to obtain the pregnancy, but this number started to decrease in 2003 (2.8), probably because of younger patients. In ICSI group, the mean age was 35.7 (range 21-41), the mean FSH level 8.4±3.1 (range 3.6-9.8), and the mean number of embryo transferred was 1.86±0.95. With ICSI, we obtained 9 clinical pregnancies, all ongoing (26.5% pc). The mean age was 37.1 in pregnant women, the mean FSH level 7.8±3.2. Pregnancy was obtained after an average of 1.4 cycles. 6 pregnancies (13.3%) were twins, 4 by IUI (11.1%), 2 by ICSI (22.2%). Finally, 45 couples among 135 were successful in their demand (33.3%) during the studied period. At this time, 7 patients delivered 8 babies, all healthy. No HIV infection was reported among 130 treated women (all pregnant women were assessed).

**Conclusion:** We are now able to help the HIV serodifferent couples to conceive with an actual safety on virus transmission. Although ICSI provides a better pregnancy rate per cycle, it remains a heavy procedure for women, and should be performed when IUI is not possible for tubal, sperm, or virologic reasons. IUI combines a good pregnancy rate (without a high rate of twins) with a “lighter” procedure for women and medical teams.
out of the 146 singular pregnancies (3.4%) were detected by intrauterine karyotyping. Three cases of trisomy 21, one case of trisomy 18 and one case of X monosomy were found. Out of the 22 twin pregnancies one case of trisomy 21 (4.6%) was found, while in the triplet pregnancy all three fetuses had normal karyotypes. In case of maternal age over 35 years, we found 4 aneuploid fetuses of 99 patients (3.5%). In case of mothers younger than 35, we found 2 aneuploid fetuses of 70 patients. We did not detect abnormal karyotype from the parents of the affected fetuses. The incidence of aneuploidies in the control group was 2.1%.

**Conclusion:** The ratio of chromosomal abnormalities seems to be slightly increased in ICSI pregnancies when compared to pregnancies of spontaneous conception. In case of conceptions by ICSI we found no fetal aneuploidy in case of paternal age over 45 and the incidence of aneuploid fetuses was not considerably increased in mothers aged over 35 in this group. Our observation supports the need for fetal chromosome analysis of fetuses conceived by ICSI.

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**P-322 Medical outcome of 8-year-old ICSI children**

F. Belva, K. Boelaert, L. Leunens, M. Bonduelle

**Background:** Literature data suggest that children born after ICSI are possibly at increased risk of neuro-developmental delay and fertility problems. In addition some reports indicate an increased risk of congenital anomalies and imprinting related problems. This is the first long-term follow-up study undertaken on these issues in 8-year-old children.

**Methods:** In a prospective study, the medical and developmental outcome at the age of 8 years ± 11 months of 110 singletons born after ICSI were compared with those of 109 singletons born after spontaneous conception (SC). Of the total of all Dutch-speaking ICSI children from our centre turning 8 between February 2001 and November 2003, 59% was examined. Of all couples contacted by phone, 70% responded positively. Controls, conceived spontaneously, were recruited from schools. They were selected to match socio-demographic parameters as closely as possible. A full clinical examination (including hearing test) was performed with particular attention given to minor/major malformations (using ICD-10 codes) and pubertal development. Neurological examinations were scored according to Touwen’s criteria.

**Results:** ICSI and control socio-demographic characteristics were comparable in terms of educational level and ethnic origin of the parents. Medication and diseases during pregnancy did not differ significantly between ICSI and SC groups, although ICSI mothers were significantly older (p < 0.001). Gender ratio was comparable in the two groups. ICSI children had no significantly different gestational age and birthweight, but were more often admitted at neonatal care units (p < 0.05). No more hospital admissions, chronic diseases or behavioural problems during childhood were reported in the ICSI group, when compared to the SC group. The incidence of both major (ICSI 2.7%, SC 0%) and minor anomalies (ICSI 28.1%, SC 18.3%) were comparable between the two groups. Clinical examinations (weight, height, head circumference, heart auscultation, abdominal palpation, hearing, skin) including pubertal development (Tanner scores) showed no difference between the 2 groups. ICSI children had slightly higher systolic and diastolic blood pressure (p < 0.05). Different elements of the neurological examination such as speech, tone and gait showed no differences between the two groups. Isolated subtests for coordination and balance scored better in the control group.

**Conclusion:** The onset of puberty and overall findings of the medical outcome are reassuring. No more congenital malformations were found in this limited group. Although the majority of the neurological tests were comparable between the two groups, coordination and balance should be subjected to further investigation. Findings on the development of these children are discussed in the related abstract.