

the first method used was IVF (56% vs 51%; $p < 0.02$), whereas it was not case if the first treatment was ICSI (54% vs 53%, $p = 0.97$).

These calculations based on the assumption that patients who did not return for IVF/ICSI cycles would have the same chance of a pregnancy resulting in a live birth as patients who continued treatment. were confirmed by calculations based on assumption that none of the women who did not return for a subsequent cycle would have had a live birth.

Limitations, reasons for caution: Despite our robust methodological approach, the presence of biases related to retrospective design cannot be excluded.

Wider implications of the findings: Our results, demonstrate that selection of the first method for assisted reproduction, based on the results of SCSEA analysis, has a statistically significant impact on the CLBR.

Trial registration number: Not relevant.

P-120 Is fertility preservation justified in male patients with congenital adrenal hyperplasia (CAH)?

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Study question: Is sperm cryopreservation relevant in patients with congenital adrenal hyperplasia (CAH), especially in those having testicular adrenal rest tumours (TARTs)?

Summary answer: Men with CAH should benefit from a sperm cryopreservation at the onset of puberty, before the occurrence of TART and/or before alteration of sperm parameters.

What is known already: CAH is a genetic autosomal recessive defect in the adrenal steroidogenesis pathway. 21-hydroxylase deficiency is the most common form, leading to glucocorticoid and in more severe cases, mineralocorticoid deficiency associated with androgen excess. The clinical phenotype is classified classic (with or without salt-wasting) for the severe form or non-classic for the mild form. In men with CAH, infertility is an important complication in which (TARTs) are the most frequent cause. TARTs can strongly contribute to the occurrence of oligospermia or azoospermia through an obstructive or a deleterious paracrine effect. Therefore, several authors have recommended sperm cryopreservation in patients with CAH.

Study design, size, duration: This was a retrospective and observational study including CAH male patients, addressed to the CECOS (sperm bank) of Paris Cochin Hospital between 2008 and 2017 for sperm cryopreservation. Clinical, hormonal and testicular ultrasound data were collected as well as sperm parameters before freezing and after thawing.

Participants/materials, setting, methods: Twenty CAH patients between 15 and 37 years old, with or without TARTs were included. Initial sperm analysis was performed in all patients. Sperm cryopreservation was performed in 15 men and sperm parameters before and after freezing were analysed. Data were compared between the group of patients with TARTs or without TARTs. All samples were analysed according to the WHO 2010 recommendations. The potential use of straws in assisted reproductive technology (ART) was evaluated.

Main results and the role of chance: Mean age of the patients was 22.1 +/- 5.6 years old. 85% of them had a 21-hydroxylase deficiency, and 75% classified as salt-wasting TARTs were present in 65% of the patients. Median total sperm count (33.8×10^6) and sperm concentration (12.1×10^6 /ml) was low according to the WHO criteria. 25% (5/20) of the patients showed azoospermia and 25% (5/20) showed oligospermia while 50% (10/20) had normal sperm. All patients who were azoospermic had TARTs (5/5). Severe oligozoospermia (< 5 M/ml) was significantly more frequently observed than moderate oligozoospermia (between 5 and 15 M/ml) or normozoospermia (> 15 M/ml) in patients with TARTs compared to patients without TARTs ($p = 0.04$). Sperm concentration and total sperm count were significantly lower in patients with TARTs than in patients without TART (respectively $p = 0.02$ and $p = 0.03$). The [DV2] post-thawing sperm progressive motility was significantly lower in all patients ($p = 0.001$) and particularly in patients with TARTs compared to sperm progressive motility before freezing ($p = 0.01$). The mean total number of motile spermatozoa per straw was low, at 0.7×10^6 , allowing their use only in ICSI in 73% of the patients in case of a future fertility project and regardless to the fertility check-up in the female partner.

Limitations, reasons for caution: CAH is a rare disorder, explaining the low number of patients included. The same is observed in the scientific literature. Our study was a retrospective observational study and a prospective longitudinal study with a larger sample would be necessary to confirm these first results about sperm cryopreservation in CAH patients.

Wider implications of the findings: We have confirmed that patients with CAH and especially those with TARTs, could have severe altered sperm parameters, with high rate of azoospermia. Sperm cryopreservation should be proposed as soon as possible, before the occurrence of TARTs and/or alteration of sperm parameters, in order to improve their chance to procreate.

Trial registration number: Not applicable.

POSTER VIEWING

Embryology

P-121 Effects of the oral oxytocin receptor antagonist nolasiban on early embryonic development

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Study question: Nolasiban, an oral oxytocin receptor antagonist, may increase rates of implantation and live-births among patients undergoing ART. The embryonic safety of nolasiban was demonstrated using rat and rabbit models.

Summary answer: Nolasiban showed no teratogenic or embryotoxic effects in rats and rabbits, nor effect on postnatal development and learning abilities of rats at the doses tested.

What is known already: Antagonism of oxytocin receptors may enhance uterine receptivity by decreasing uterine contractions and by improving endometrial perfusion. A meta-analysis of 7 studies showed significant improvements in clinical pregnancy rate after administration of oxytocin receptor antagonist (OTR) atosiban. To enable safe clinical testing of nolasiban, a novel, oral OTR, it is critical to evaluate its effects on early embryonic development.

Study design, size, duration: We administered nolasiban to rats and rabbits from implantation and throughout embryonic development at doses of 0, 37.5, 75 and 125 mg/kg/d and of 0, 125, 200 and 300 mg/kg/day, respectively, to assess fetal safety.

Participants/materials, setting, methods: Purpose-bred pregnant rats (50/group) and rabbits (20/group) were treated daily from gestation day (GD) 6-17 and 7-19, respectively. Females underwent cesarean section before term and external, visceral and skeletal examinations of fetuses were performed.

Additional rat groups were allowed to litter and offspring was assessed for mortality, behavior, learning abilities and reproductive performance.

Main results and the role of chance: Nolasiban had no effect on pregnancy parameters of pre- and post-implantation loss or the number of implantations or live fetuses per female. There were no effects on fetal weight or fetal sex ratio and no malformations. Treatment had also no effect on clinical observations including body weight, food intake developmental hallmarks such as vaginal opening and testes descent, behavior and learning abilities and mating and reproductive performance. The number of observed litters were sufficient to exclude nolasiban effects and in line with international testing guidelines.

Limitations, reasons for caution: The translation of animal findings to man should be made with caution.

Wider implications of the findings: In addition to previously reported peri-implantation safety data, these studies confirm the absence of harmful nolasiban effects on early fetal development, paving the way for developing nolasiban for use in ART. Our findings raise a potential to administer nolasiban beyond the current single-dose administration on the day of embryo transfer.

Trial registration number: N/A.

P-122 Time intervals from the hCG trigger: analysis of different checkpoints and their impact on embryo development, implantation and pregnancy

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Study question: To analyse the impact on reproductive outcome of different time intervals at each stage of an ART procedure, from triggering of final oocyte maturation.

Summary answer: In ICSI cycles, we observed better pregnancy and implantation rates when interval between oocyte retrieval and denudation was < 2.5 hours.

What is known already: Previous reports have observed a greater number of available embryos and a significant increase in fertilization and clinical pregnancy rates when oocyte collection was close or even after 36 h from the hCG trigger. Other authors have also proposed delaying oocyte retrieval to optimize oocyte maturation.

Modifying oocyte incubation time could also affect reproductive outcomes and synchronise nuclear and cytoplasmic maturation. Some authors concluded that the incubation of oocytes approximately 1.5-2 hours between collection and denudation significantly influences the implantation rate.

Study design, size, duration: An initial set of 843 patients performing ART treatment with their own oocytes during a one-year period was reviewed. After exclusion of 145 patients with less than 3 oocytes retrieved, a cohort of 679 patients was analysed. Among them, 336 underwent ICSI and 343 conventional IVF insemination. We analysed the number of oocytes retrieved, the maturity rate, fertilisation rate, and blastulation rate, as well as implantation and clinical pregnancy rates at different time intervals.

Participants/materials, setting, methods: Patients were grouped into the following time-intervals:

- (1) hCG trigger to oocyte retrieval (<35 and >35 h; early and late retrieval)
- (2) oocyte retrieval to denudation (<2.30 and >2.30 h)
- (3) denudation to ICSI (<10 and >10 min)
- (4) oocyte retrieval to IVF (<2 and >2 h) and.
- (5) administration of hCG to IVF or ICSI (<38 and >38 h).

Continuous variables were compared by T-test; categorical variables were compared by X² test.

Main results and the role of chance: One hundred and eighty seven patients (early retrieval group) and 492 (late retrieval group) were compared, showing similar age (37.7 ± 4.0 vs. 37.3 ± 3.8, p = 0.17) and total number of eggs retrieved (8.4 ± 6.2 vs. 9.2 ± 6.1, p = 0.12). In ICSI cycles, we observed a

higher number of good quality embryos on day 3 (54.2% vs. 63.1% p = 0.002), and better blastocyst development (41.4% vs. 48.9% p = 0.0006) in the late retrieval group, which also showed a trend towards better oocyte maturity rate, although not significant (p = 0.06). Also in ICSI cycles, there was an increase in clinical pregnancy (42.3% vs. 23.2%, p = 0.005), ongoing pregnancy (34% vs. 19.6%, p = 0.03) and implantation rates (28% vs. 16%, p = 0.007) when time between oocyte collection and denudation was less than 2 h 30 min. These differences between groups were not present in IVF cycles, where both groups showed comparable outcomes. This could be related to the fact that the exact timing of fertilisation events and gamete fusion are difficult to evaluate and cannot be determined precisely.

Limitations, reasons for caution: This is an analysis of time intervals in an unselected population, where most retrievals were done in a narrow window between 35 and 36 hours of hCG trigger. Subtle differences between patients or undetected premature luteinization could affect these results.

Wider implications of the findings: Even a slight flexibilization of the trigger timing can have a substantial impact on treatment outcome because it has an influence on oocyte maturation and quality. Nonetheless, extending the culture of the oocytes prior to ICSI could have a negative effect, potentially linked to the premature ageing of the oocyte.

Trial registration number: Not applicable.

P-123 Comparing early embryo morphokinetics between patients with lower and normal ovarian response by using time-lapse microscopy in assisted reproductive technology

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Study question: Are there differences on early embryo morphokinetic parameters and cleavage stage patterns between patients with a low and normal ovarian response to controlled ovarian stimulation?

Summary answer: We did not find any statistically significant difference in early morphokinetic parameters and cleavage patterns between the two patients groups.

What is known already: In the era of time-lapse microscopy (TLM) and elective single embryo transfer, early embryo morphokinetic parameters seem to play a significant role to select the embryo with the highest implantation potency. Patients with a low ovarian response have fewer fertilized oocytes hence fewer embryos for transfer than the normal responders. Little is known about embryo developmental patterns in low responders compared with patients with a normal ovarian response and if a similar morphokinetic model can be applied in both groups.

Study design, size, duration: Retrospective study on early embryo morphokinetics and cleavage patterns in 606 oocytes, where 435 oocytes derived from 47 patients with a normal ovarian response and 171 oocytes derived from 47 patients with a low ovarian response. Data were collected from May 2015 to November 2017 and extracted from our Embryoscope database.

Participants/materials, setting, methods: Number of aspirated oocytes and AMH were used to allocate patients into two groups. Low responders had AMH ≤ 7.8 pmol/L and less than 7 oocytes, while normal responders had AMH 10-35 pmol/L and 8-15 oocytes. Time of PN fading (tPnf), time to two cells (t2), three cells (t3), four cells (t4), asynchrony in 2nd cell cycle (S2), fragmentation, multinucleation, direct cleavages from 1-3 cells, reversed cleavage, rolling and non-tetrahedral shape were recorded.

Main results and the role of chance: Student's t-test was used to compare the timings between the groups and Chi-square test to compare proportions. The parameters that did not follow the normal distribution were analyzed with Mann-Whitney U-test. The timings of the early cell divisions did not differ statistically (p-value >0.05) between the low and normal responder group (t2: 29.0 h vs 28.1 h, t4: 40.4 h vs 39.6 h). Additionally, no statistically significant difference was observed for irregular cleavage patterns (26.5 % vs 35.1 %), multinucleation (53.8 % vs 53.4 %), fragmentation and non-tetrahedral shape rate at the 4-cell stage. The groups did not differ regarding fertilization and cleavage rate as well as the number of embryos that fulfill the ESHRE criteria for top quality characteristics on Day 2.