

Study question: We determined the expressions of some cell cycle proteins and apoptotic cell number on normal and dexamethasone induced intra-uterine growth restricted (IUGR) rat placentas to see whether there are changes on the context of proliferation and apoptosis.

Summary answer: In parallel with reduced embryo and placenta weights in the dexamethasone-induced IUGR group we found reduced expression of PCNA and increased expressions of cyclin D3, p27 and p57 and higher TUNEL positive cell number in IUGR placentas compared to normal placentas.

What is known already: IUGR is a major clinical problem which causes perinatal morbidity and mortality and major etiological factor is abnormal placentation. Despite the fact that placental development requires the coordinated action of trophoblast proliferation and differentiation, there are few studies on cell cycle regulators, which play the main roles in the coordination of these events and it is still not determined how mechanisms of coordination of proliferation and differentiation are influenced by dexamethasone-induced IUGR in the placenta.

Study design, size, duration: Female rats were mated with male rats, presence of sperm in vaginal smear accepted day 0 of pregnancy. Rats were injected 100 µg/kg dexamethasone on day 13, 200 µg/kg dexamethasone on days 14-19 of pregnancy. Control animals were injected saline solution. Six rats each group were sacrificed for each method.

Participants/materials, setting, methods: After *Rattus norvegicus* rats were sacrificed on day 20 of pregnancy, blood samples were taken, placentas were formaline fixed-paraffin embedded or snap-frozen. We applied Reverse Transcriptase Polymerase Chain Reaction (RT-PCR), immunohistochemistry, Western blotting, terminal deoxynucleotidyl transferase-mediated deoxyuridine triphosphate nick end-labeling (TUNEL), glucocorticoid assay and did transmission electron microscopic observations.

Main results and the role of chance: Although there was a statistically significant ($p < 0.001$) increase of glucocorticoid levels 60 minutes after dexamethasone injection, it was normal 180 minutes after the injection in IUGR group. Mean embryo and placenta weights of control rats were higher than IUGR group with statistically significant difference ($p < 0.005$) but dexamethasone didn't affect the number of embryos. According to RT-PCR, immunohistochemistry and Western blotting results expression of PCNA was higher in control group than in IUGR group and it was statistically significant ($p = 0.041$), expressions of cyclin D3, p27 and p57 were higher in IUGR group. TUNEL positive cell numbers in IUGR group placentas were higher than control group placentas ($p < 0.001$). Electron microscopic observations was compatible with TUNEL results. Spongiotrophoblasts and labyrinth trophoblasts of IUGR placentas showed apoptotic cell characteristics.

Limitations, reason for caution: This study described decrease of proliferation, increase of apoptosis in dexamethasone injected IUGR rat placentas. Since dexamethasone is widely used to women having premature labor risk, reduces fetal growth and predisposes to increased risk of disease in later life, detailed studies should be done.

Wider implications of the findings: Our data suggests that glucocorticoid-induced restriction of fetal-placental growth is mediated, in part, via inhibition of cell cycle proteins and increase in apoptosis. Previous studies showed that dexamethasone caused a decrease in growth-promoting genes. Glucocorticoid metabolism during pregnancy is still debated. How dexamethasone acts in placental growth inhibition hasn't been determined. Since one of the reasons for IUGR is abnormal placentation we are planning new research aiming to reveal increasing apoptosis rate in IUGR placentas.

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Trial registration number: None

P-267 Histological assessment of impact of ovarian endometrioma and laparoscopic cystectomy on ovarian reserve

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Study question: Is it possible to evaluate precisely the impact of ovarian endometriotic cyst (EC), laparoscopic cystectomy, and age on follicle reserve in healthy ovarian tissues and in surgically resected cyst walls?

Summary answer: Ovarian endometriomas have a detrimental impact on follicle reserve in younger patients, further, laparoscopic cystectomy for EC may accelerate the rate of oocyte loss associated with aging.

What is known already: The rate of oocyte decline follows a biphasic pattern, characterized by acceleration between 32 to 38 years old. Ovarian reserve is also affected by external factors including ovarian disease and iatrogenic damage.

Study design, size, duration: This cohort and cross-sectional study. The follicles in normal ovarian tissue and resected cyst walls were morphologically graded using semi-quantitative scale. In normal ovarian tissue samples, the stromal area was measured, the number of follicles counted and the density calculated.

Participants/materials, setting, methods: Out of 110 patients who underwent laparoscopic ovarian cystectomy were recruited to the study after providing written informed consent. Based on histological assessment, 61 patients were found to have EC, whereas 42 patients had non-EC. Seven patients without normal ovarian stroma in the biopsy specimen were eliminated.

Main results and the role of chance: The density of follicles in ovarian tissues correlated with the patient age in both groups. In women aged < 35 years, the relative density of follicles in healthy ovarian tissues was lower in the EC group compared to the non-EC group, with a relative ratio at age 20, 30 and 35 years calculated to be 35.4%, 46.8% and 62.7%, respectively. There was no significant difference between the groups in patients aged > 35 . The resection rate of normal ovarian tissue in cystectomy specimen of EC group was significantly higher than in non-EC group. According to the comparison between cases of cyst walls with and without normal ovarian tissues, the size of EC in the cases of cyst wall with ovarian tissue was significantly smaller than without ovarian tissue.

Limitations, reason for caution: Ovarian tissues were biopsied from visually healthy ovarian tissue expanded by ovarian cyst.

Wider implications of the findings: The rate of age-dependent follicle loss in the EC group was less pronounced than in the non-EC group, suggesting that persistent EC may elicit a protective response in adjacent ovarian tissue. The findings of our histological study support the notion that current practice of cystectomy of relatively small EC should be avoided before fertility treatment, such as IVF. On the other hand, if conservative surgery becomes indicated, aggressive cystectomy should be avoided as far as possible.

Study funding/competing interest(s): There is s.

Trial registration number: No number.

Ethics and law

P-268 Surrogate mothers: background and motivations

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Study question: It's a preliminary report to clarify motivations of intended surrogate mothers and "experienced" surrogates and, taking into consideration their background, specify if their main motive is an altruistic wish to help childless people to become parents, either it's all about money, or the surrogates are driven by combination of different motives.

Summary answer: There is no main driving force behind surrogacy and, although financial remuneration is essential for many surrogates, it's almost always a mix of several motivations, including a sincere wish to help and a need to improve their own living conditions.

What is known already: Beyond money surrogates might have very different motives, such as guilt over a past abortion, or just like to be pregnant.

Study design, size, duration: The study has been conducted for 6 months from August 2012 to January 2013. Only gestational surrogacy was studied as

traditional surrogacy, when own oocytes of a surrogate are used, is out of law in Russia.

Participants/materials, setting, methods: 100 e-mail questionnaires were sent out to women who applied to European Surrogacy Center in Moscow to become gestational surrogates in 2012. 73 participants, among them 9 experienced surrogates, 28 first time surrogates incl. 7 who became pregnant in 2012, completed the 30 question form by e-mail.

Main results and the role of chance: The mean age of the entire group was 29. 54% were married, 15% divorced, 12% had a partner. All participants had children (63% - 1, 22% - 2, 15% - 3). 29% graduated from a higher school, 3% were students, 68% graduated from a college. Only 36% were employed, 64% were housewives, supported by husbands (56%). 68% owned an apartment, 25% rented it, 7% owned a house. No participant lived in poverty or needed any support to survive.

Main motivations for becoming a surrogate, almost always combined: to help – 74%, to improve living conditions – 43%, to improve financial situation – 16%, for studies or treatment of their children – 15%, to return a credit – 14%, liked to be pregnant – 12%, remorse for an abortion – 7%, to buy a car – 5%, to start own business – 4%.

44% declared that they would bear a child to their relative or close friend free of charge. 15% would agree to help to anyone in need for free. 4% expressed that their only motive was to help, although 26% declared no wish to help at all, being money their most important motivation.

Limitations, reason for caution: Commercialization of child bearing and its implications should be thoroughly studied. Further studies of surrogates, their motivations and psychology should be conducted in countries where surrogacy is allowed.

Wider implications of the findings: There would be no surrogate industry and no children born without substantial financial remuneration paid to surrogates. An altruistic surrogacy is confined to a small circle of relatives and close friends and cannot help all who might need it. Legalization of altruistic surrogacy won't help those who need urgent help. Commercial surrogacy should be allowed on a wider level to enable childless people to become parents.

Study funding/competing interest(s): I declare no competing interests.

Trial registration number: There is no trial registration number.

P-269 What constitutes parenthood according to both genetically and non-genetically related mothers (lesbian parents)

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Study question: What constitutes parenthood according to partners in lesbian couples with children? How do they define parenthood and what criteria do they consider relevant in the attribution of parental rights in a hypothetical scenario?

Summary answer: The criteria described in the literature (genetic/gestational link, social bond, intention and causation) were present as monistic or necessity accounts in how these mothers dealt with the scenario. When applying these accounts of parenthood to their own situation, this often profoundly challenged either their own or their partner's status.

What is known already: The existence of families with genetically and non-genetically related parents has given rise to questions about the definition of parenthood. Views about what constitutes parenthood and which parental rights can be attributed to whom depend on the particular moral theory of how one becomes a parent. The criteria used to determine parenthood (such as intention) as well as their theoretical foundations are discussed in the literature. This study focusses on the views of stakeholders.

Study design, size, duration: Semi-structured interviews were conducted between October and December 2012 with lesbian parents who were successfully treated with DI (with sperm from anonymous donors) between 2002-2005 at the Department of Reproductive Medicine of the Ghent University Hospital. Step-by-step inductive thematic analysis resulted in themes that were compared with the literature.

Participants/materials, setting, methods: 20 partners of 10 couples were included. This paper presents the analysis of responses to a hypothetical scenario of a gamete mix-up in a lab that resulted in three types of 'parents' who each

separately claimed parental rights: genetic and social parent (GSP), genetic parent (GP) and social parent (SP).

Main results and the role of chance: Participants were asked to choose between four types of rights (ranging from full custody to no contact) for each 'parent' and elaborate on their decision. Most mothers automatically granted maximum rights to GSP whereas choosing rights for parents with only one of the two ties was considered much more difficult. At this stage, there were substantial differences between participants (irrespective of their own genetic parenthood status) in the weight attributed to the genetic and the social link. Also, intention and causation were identified as key criteria to be granted parenthood. Some participants granted no rights to SP based on the absence of a genetic link. These mothers described a view that, when compared to their own situation, disqualified either themselves or their partners as parents.

Limitations, reason for caution: The use of hypothetical scenarios facilitates data collection on moral reasoning. However, caution is needed when making assumptions about how participants would (re)act in the social reality. Interviewing partners together has probably influenced their responses but also adds an extra dynamic to the interview because they probed each other's responses.

Wider implications of the findings: The scenario facilitated an in-depth discussion of an important question in the field of reproductive medicine and provided us with unique data from a group that is usually only the subject of the discussion. Findings of this empirical bioethics study can stimulate the debate in the literature. They can provide valuable insights into stakeholders' reflections that can contribute to the development of moral theories about social and genetic parenthood and the attribution of parental rights.

Study funding/competing interest(s): The project is funded by the Special Research Fund of Ghent University. Approval by the appropriate Ethics Committee has been obtained.

Trial registration number: None

P-270 Revisiting the fourteen-day limit for human embryo-research

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Study question: As new developments may enable human embryo-research to move toward and beyond the internationally accepted 'fourteen-day limit', the question whether this limit should be upheld against promising research seems no longer fully hypothetical. What are the ethical arguments behind the fourteen-day limit and how convincing are they?

Summary answer: The existing consensus reflects the will of policy-makers to draw a line somewhere rather than a shared understanding of why precisely this should be at fourteen days and not at some other developmental stage. None of the reasons given for a limit at fourteen days are argumentatively convincing.

What is known already: The reason why until now there has been no debate about the fourteen day limit is that it was not possible to culture human embryos for longer than around a week. This may change now that British researchers (Cambridge) have developed a culture system that allows studying mouse embryonic development in stages that normally occur after implantation. The findings have led to interest in studying 'post-implantation' human embryonic development through extended in-vitro culture.

Study design, size, duration: In this explorative study, we have charted the ethical arguments behind the fourteen day limit as presented in the philosophical literature about human embryo research and in relevant (inter)national policy and legal documents. We have determined the convincingness of these argument in terms of their internal and external consistency.

Participants/materials, setting, methods: The study consists of a review of the arguments in the ethics literature followed by a theoretical reflection and conclusion. The method is that of 'wide reflective equilibrium', aimed at finding a balance between moral intuitions, background theories and ethical reflection.

Main results and the role of chance: Extended human embryo research may lead to important knowledge about early post-implantation development (both in terms of basic science and health care applications) that cannot otherwise be obtained. However, it would violate the widely accepted fourteen day limit, raising the question whether that should be a reason to refrain from such research. An often proposed argument for this limit is that of 'ontological individuality', holding that the moment after which embryonic division is no longer possible should be

regarded as an ethically relevant transition point. Still, the question remains whether this and other arguments provide sufficient backing for a limit at fourteen days. Those contesting this have pointed at other transition points that would be ethically more important, such as the beginning of brain-activity.

Limitations, reason for caution: This is an explorative study that does not answer the question under what conditions extended human embryo research would be ethically acceptable if the fourteen-day limit is regarded as too restrictive, or at what stage an alternative limit should be drawn.

Wider implications of the findings: Our conclusions make clear that an accepted element of the normative framework for human embryo research may be less firmly rooted than many would have thought. Instead of uncritically using the accepted limit to curb scientific developments, policy makers should accept that there may be sound ethical reasons for fine tuning the balance between embryo protection and reaping the benefits of embryo research. This fine tuning will require further ethical reflection and societal debate.

Study funding/competing interest(s): Both authors: Dept of Health, Ethics & Society, and GROW research school, Maastricht University, the Netherlands. The authors declare no competing interest.

Trial registration number: N/A

P-271 iPS cell derived gametes for reproduction ñ why not?

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Abstract withdrawn by the author

P-272 Comprehensive embryo screening and selection in preimplantation genetic diagnosis (PGD) and preimplantation genetic screening (PGS) and the right of the child to an open future

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Study question: One of the objections to comprehensive embryo screening (CES) uses Feinberg's concept 'the right of the child to an open future' (ROF). Is this argument applicable to this context and is it a valid reason to disallow comprehensive screening of embryos?

Summary answer: The transfer of comprehensively sequenced embryos seems to violate recommendations regarding the genetic testing of minors and a child's ROF, as it also reveals information that is not directly actionable. However, considerations regarding the benefits to harm ratio suggest that, under further conditions, CES may still be warranted.

What is known already: High resolution genetic screening technologies such as microarrays are being introduced in PGD and PGS to assist embryo selection. Embryos could be screened either for a subset of severe genetic disorders to deselect affected embryos or comprehensively screened to set up health profiles, which allow selection of the best embryo. In the ethics literature on genetic testing of minors, Feinberg's ROF-argument is used against comprehensive screening of minors.

Study design, size, duration: We have investigated the philosophical arguments behind the claim that ROF limits the extent to which genetic testing of minors should be allowed, and checked to which extent these arguments can be transferred to the context of the in vitro embryo.

Participants/materials, setting, methods: The study consists of a review of the arguments in the ethics literature followed by a theoretical reflection and conclusion. The method is that of 'wide reflective equilibrium', aimed at finding a balance between moral intuitions, background theories and ethical reflection.

Main results and the role of chance: Given the limited amount of embryos available after IVF, and the probability that no embryo will be mutation-free, CES implies transfer of embryos with known mutations. This seems at odds with guidelines limiting genetic testing of minors. A strict interpretation of the deontological argument behind these guidelines (respect for future autonomy) leaves little room for CES. We advocate a consequentialist (or mixed) approach promoting a balance between potential harms and benefits. This would leave only a subset of possible findings that would make transfer morally unacceptable in the light of ROF, for

example serious non-treatable late-onset disorders, but possibly also certain susceptibilities knowledge of which might adversely affect parent-child interaction. Our approach allows CES if conditional upon non-transfer of findings in these categories.

Limitations, reason for caution: Our conclusion seems to violate certain recommendations and regulations regarding the genetic testing of minors. As this is an explorative study, further research, also involving stakeholder views (including professionals, patients, parents and children), will be necessary.

Wider implications of the findings: A rethinking of Feinberg's ROF in terms of a balance between benefits and harms allows for a wider number of conditions and mutations to be screened for in the context of PGD and PGS and for an ethical transition of the existing paradigm of not transferring an affected embryo to transferring the embryo with the best chance of good health. Still, a reflection is needed on what knowledge can actually harm potential future children.

Study funding/competing interest(s): All authors: GROW research school, Maastricht University. K. Hens is funded by the Dutch Centre for Society & the Life Sciences. The authors declare no competing interest

Trial registration number: N/A

P-273 Cross-border reproductive care in Europe and medical liability litigations: which court is competent and which law is applicable

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Study question: In the past decade, there has been a steady rise in cross-border reproductive care (CBRC) within Europe. However, the legal position of fertility centers is insecure when foreign patients complain they are unduly treated. Which national court is entitled to handle such cases and which law is applicable?

Summary answer: Several member state courts can be entitled to decide on CBRC liability litigations according to various possible law systems. In accordance with the EU Guideline 2011/24 the development of compulsory CBRC safety standards is therefore strongly recommended. Meanwhile, drawing up contractual agreements is advised to avoid legal insecurity.

What is known already: The European Union has enacted complex directives on cross-border litigations. Some determine the competent court (e.g. Directive 44/2001), other the applicable law (e.g. Directive 593/2008). According to Guideline 2011/24 cross-border healthcare should be offered according to the regulations of the member state in which the treatment is carried out, as well as the "union legislation on safety standards". Except for the Tissue Directive 2004/23, no uniform European standards on reproductive care have been enacted yet.

Study design, size, duration: This study analyses the competent court and applicable law if a fertility center established in member state 'X' is accused of medical malpractice by a patient living in member state 'Y'. Examples of possible malpractices are the excessive hormonal stimulation and inadequate follow-up of PCOS patients causing ovarian hyperstimulation syndrome and transferring a high number of embryos causing intrauterine growth retardation and preterm delivery or heterotopic pregnancies[1].

[1] Mancini F, Clua E, Martinez F, Battaglia C, Veiga A, Barri P. Heterotopic pregnancy in a cross border oocyte donation patient: the importance of cooperation between centers. *Fertil Steril* 2001; **95**(7): 2432.e13-5 (in this case one of the two transferred donor embryos caused a heterotopic pregnancy).

Participants/materials, setting, methods: For such cases the legal consequences of the EU regulations were studied. Therefore a thorough research of the official EU texts, interpretations by the European jurisdiction and the legal doctrine was conducted.

Main results and the role of chance: Except for criminal offenses, fertility centers can freely stipulate the competent court and applicable law in patient contracts or consent forms. In the absence of such clauses, patients can bring their center to the court of the state in which it is established or in which the treatment is carried out (usually the same). If the consumer protection regulations apply to CBRC (which is unclear) centers can also be sued in the patient's country of origin.

If the applicable law was not determined in advance, the center's liability is assessed according to the regulations of the state in which it is established. So long as no compulsory European reproductive guidelines are enacted (e.g. on embryo transfer) centers are only bound by national due care criteria.

Limitations, reason for caution: The EU regulations on CBRC litigations are complex, often unclear and sometimes contradictory. If patients are protected as consumers, the centers' contractual freedom is limited. Legal insecurity also arises if medical contracts are manifestly more closely connected with another country, e.g. if domestic gynecologists and foreign fertility centers collaborate intensively.

Wider implications of the findings: To reduce legal discussions, the EU should clarify which regulations specifically apply to CBRC cases. Meanwhile, fertility centers are recommended to stipulate in the consent forms that patient complaints can only be assessed by the courts and laws of the state in which they are established. Nevertheless, the development of binding European safety standards for reproductive care is essential to avoid different interpretations by the national courts. ESHRE's role in this evolution can be crucial.

Study funding/competing interest(s): Ghent University - no competing interests
Trial registration number: none

Female (in)fertility

P-274 Immune profile of Sudanese women with conception disorders: possible role for T-helper Cytokines

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Study question: This study aims to determine the cytokines profile of Sudanese women with infertility and recurrent abortions.

Summary answer: Sudanese women with conception disorders showed predominantly Th1 type of immune response in peripheral blood mononuclear cells (PBMCs) when stimulated with trophoblastic antigen compared to women who had a history of normal pregnancy.

What is known already: Successful pregnancy may depend, at least in part, on the bias of the maternal immune response shifting away from Th1 type responses towards a Th2 phenotype, both in murine models and humans. An abnormal Th1-type cellular immune response is the basis for a recent hypothesis for immunological reproductive failure in women. Unexplained conception disorders, premature delivery and pregnancy-induced hypertension may all, in some cases, be linked to immune and cytokine networks of early pregnancy.

Study design, size, duration: This prospective, case-control, cross-sectional and hospital-based study. 25 women with a history of unexplained conception disorders (15 infertile women, 10 women with recurrent miscarriages) were compared with 75 pregnant women with history of success pregnancy as controls, during 2006-2008.

Participants/materials, setting, methods: Women with a history of unexplained conception disorders and pregnant women, Blood samples and peripheral blood mononuclear cells (PBMCs) were stimulated by phytohaemagglutinin (positive controls) and trophoblast antigen in an in vitro culture system and secreted cytokines were determined using the ELISA technique.

Main results and the role of chance: Mean INF- γ level among women with histories of normal pregnancies (6.20 ± 4.51) was significantly lower than among infertile women (33.45 ± 8.14) and women with recurrent miscarriage (35.79 ± 13.1). ($P = 0.00$). Mean INF- γ levels among infertile women were statistically similar to women with recurrent miscarriage, mean IL-4 level among women with histories of normal pregnancies (14.05 ± 6.50) were significantly higher than among infertile (11.51 ± 3.60) and women with recurrent miscarriages (9.24 ± 4.95) ($p = 0.04$) Mean IL-4 levels among infertile women and women with recurrent miscarriage were statistically similar ($p = 0.33$).

Limitations, reason for caution: Observational studies like ours, needed a large sample size and well-controlled.

Wider implications of the findings: Large scale studies are needed to further elucidate the role of Th1 immune response bias in female infertility and recurrent

spontaneous abortions in Sudanese women. The role of immune modulation in the treatment of unexplained female infertility and recurrent spontaneous abortions should be seriously investigated as a possible treatment modality.

Study funding/competing interest(s): None

Trial registration number: None

P-275 One-to-one donor egg recipients and egg sharer recipients: a comparison study in IVF/ICSI success rates

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Study question: Do women having IVF/ICSI with egg donation, where the recipient receives all available eggs from an egg donor have higher IVF/ICSI success rates compared to patients receiving half the number of eggs from an egg sharer (ES)?

Summary answer: Women receiving donor eggs (DE) from an ES have comparable pregnancy (PR) and live birth rates (LBR) to those having one-to-one donation (OTOED).

What is known already: Numbers of egg donors in the UK have declined due to limitations in compensation and lack of complete anonymity following recent changes in legislation. Egg sharing has reduced waiting times for women requiring DE, who might otherwise consider egg donation overseas. This offers affordable IVF to ES, benefiting both donor and recipient. Concerns remain as to whether a reduction in the number of DE available from an ES affects IVF success rates in the recipient.

Study design, size, duration: Data was prospectively collected of women undergoing IVF/ICSI through egg donation between January 2007 and January 2012. Information was recorded electronically. 186 OTOER and 457 ESR cycles were included in the analysis. ES were deemed suitable to donate if strict selection criteria were met, this included age ≤ 35 years.

Participants/materials, setting, methods: Recipients had DE through either anonymous OTOED or the egg sharing programme. Egg sharing DE recipients (ESR) were suitably matched and received 50% of eggs from an ES for an IVF/ICSI cycle. Cycle outcomes were compared between OTOER and ESR using a cross tabulation t-test and ANOVA was performed.

Main results and the role of chance: OTOER were of a higher mean age (40.5; ESR, 43.2) ($P < 0.05$). Cycle cancellation rate (OTOER, 6.4%; ESR, 6.6%), fertilisation rate (OTOER, 68.6%; ESR, 69.8%) and average number of embryos transferred (OTOER, 1.6; ESR, 1.6) did not differ between the two groups ($P > 0.05$). Mean number of DE and available embryos for transfer were higher for OTOER compared to ESR (9.6 and 6.25, 6.3 and 4.2 respectively), but this did not reach statistical significance ($P > 0.05$). No significant difference in PR (OTOER, 54.3%; ESR, 56.5%), LBR (OTOER, 36.6%; ESR, 39.2%) or rate of miscarriage (OTOER, 32.7%; ESR, 30.6%) was demonstrated. OTOER were more likely to have embryos available for cryopreservation at the end of their cycle compared to ESR (41.1% and 25.4%, $P < 0.05$).

Limitations, reason for caution: None

Wider implications of the findings: This study demonstrates that despite receiving a lower number of DE from an appropriately selected ES, IVF success rates are not compromised for recipients, having demonstrated comparable PR and LBRs in these women. OTOER may however have more embryos available for cryopreservation, hence increasing their chances for a future pregnancy.

Study funding/competing interest(s): None

Trial registration number: Not applicable

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