Egg sharing for research: successful outcome for patients and researchers

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Recent discussions in this journal have identified the research need for donated eggs, concern for the welfare of the donor and the ongoing ethical debate about financial compensation (Hyun 2010, Egli et al 2010). It is acknowledged that there needs to be robust regulatory oversight and that this must take account of the physical risks incurred by the donor. In response to these issues, we initiated an egg sharing scheme for women undergoing IVF treatment. Review of the outcome for these women indicates that this source of eggs has proved to be successful for both patients and researchers.

An 'egg sharer' is a woman who donates half of the eggs collected during her IVF procedure in return for a reduced treatment cost. Egg sharing for treatment provides eggs so that another woman may have a child and this is established in the UK (http://www.hfea.gov.uk/534.html http://www.hfea.gov.uk/3412.html). Egg sharing for research (ESR) should be a less ethically challenging option since no child results. Nonetheless, there are still concerns expressed about 'exploitation' and 'commodification' that are complicated by the context of embryo research and financial transactions. The Nuffield Council on Bioethics recently published a report addressing the ethical issues surrounding donation of bodily tissue to medicine and research and this included gamete donation and financial compensation (http://www.nuffieldbioethics.org/donation.). Notwithstanding the ethical issues surrounding ESR, their qualified recommendation states "We do not think it appropriate to recommend any changes to the current policy within the UK of permitting egg-sharing" (Summary 53). Whilst not undervaluing the ethical discussions, it is not the purpose of this letter to revisit them but to provide data about the implementation of the scheme such that the previously theoretical debate is informed by practice.

The process of obtaining regulatory approval in the UK was robust. The Research Ethics Committee approved our proposal in December 2005. HFEA deliberations from December 2005 included discussion at two Authority meetings, their Licence Committee, their Ethics Committee, a public consultation, and a legal appeal to the Licence Committee before final approval was given in September 2006. The subsequent funding by the MRC permitted ESR and recruitment started in late 2007.

Suitable donors are women <36 years with good ovarian reserve (FSH <10IU/l, good response to previous superovulation or antral follicle count of >12) who require self-funded IVF treatment. The ovarian stimulation protocol is our standard IVF regime. ESR reduces the cost of IVF treatment by £1500 (unreduced cost £3200-3700). Written information was given about the research and consent for ESR is taken by an independent research nurse (see supplementary data)

Between 2008 and 2010, 265 women requested information about the scheme. 112 met the criteria and 59 agreed to participate. 7 women withdrew consent at egg collection and 10 had an unexpected poor response to superovulation so retained all their eggs for their treatment at the reduced cost. Thus 42 women completed 51 ESR treatments (5 had 2 and 2 had3 ESR treatments).

A criticism of ESR is that it reduces the chance of pregnancy to the donor thus may require her to have more treatment to achieve the same pregnancy rate. To evaluate this we identified 51 contemporaneous matched patients from non-sharers who had comparable demographic and clinical characteristics (selected to reflect parameters known to influence IVF outcome) i.e. age, cause of infertility, previous pregnancy, treatment type (IVF/ICSI), number of previous treatments and number of oocytes collected (Templeton and Morris). Thus repeat ESR treatments were matched with new controls to take account of the additional previous treatment.

The mean number (± SD) of follicles aspirated (20.3 ± 10.5 vs 18.8 ± 8.82) and oocytes obtained (15.2 ± 9.21 vs 14.6 ± 7.01) in each group were similar. The mean number of metaphase II eggs in each group was 8.38 ± 4.7 vs 12.9±6.5. The number of embryos 5.08 ± 3.34 (Range: 1-14 embryos; Median: 5) generated in the ESR group compared to 8.46 ± 4.92 in the control group (Range: 1-25 embryos; Median 8, $p<0.0001$). 10 women had embryos cryopreserved in the non-sharing control group (19.6%) but none of the ESR women ($p< 0.01$). No women developed complications or were hospitalised.

The positive pregnancy test and live birth rate per treatment started (LBR) were 41.1% and 37.25% for ESR group and 47.1% and 29.4% for the control group (NS $p>0.2$). The multiple pregnancy LBR was comparable between both groups at 21.05% (n=4) v 20% (n=3). Of the 10 control women with frozen embryos, 2 women still have them stored, 2 have discarded them, 6 women had frozen embryo transfer resulting in one birth. Thus the cumulative LBR for non-shared paired control group was 31.3%.

UK data demonstrates that neither the presence of >12 eggs (Sunkara et al) nor the presence of >4 embryos improves LBR (Templeton & Morris). Thus such women (young, 'good prognosis') do not need all the eggs that they produce after superovulation to achieve optimum LBR. Selection of such patients for ESR is advised and they should still achieve better than average LBR. The physical risk to the donor is the same as standard IVF treatment.

An analysis of patient experience of our scheme has been conducted by an MRC-funded independent study in which all ESR patients were invited to focused interviews. A first analysis concentrates on the issue of 'exploitation'. Whilst not being appropriate to paraphrase the breadth of information obtained in their paper, the conclusion was that 'most grounds for acknowledging the potential of the ESR to be exploitative are dismissed and other grounds are cited for rejecting the charge outright' (Taylor and Haimes In Press).

ESR has resulted in 467 fresh oocytes being donated to research and utilised for approved research projects.

Accepting that eggs remain a significant rate limiting factor for research progress, all options must be considered. We concur with the view that non-patient egg donors must not be discriminated against in comparison to participants in other medical research by being denied appropriate financial compensation for their time, effort and inconvenience. Nonetheless, we offer this ESR option as a practical and ethically acceptable alternative.

References

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Supplementary data

Information for donors about Egg Sharing
Information for donors about research
Consent form for egg sharing.