BJOG Exchange

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### Author's reply

Sir,

I thank you for the opportunity to respond to the letter submitted in response to my original article 'UK criteria for uterus transplantation: a review'. 1 I read with interest the letter, as it is written by the members of the UK-based team that are soon to conduct uterus transplants.2 The information has clarified and supported many of the points that I raised in mv article.

The response engages with three of the five criteria that I considered: the use of own ovum by recipients, the preference for a partner, and donors. The authors have taken the time to clarify and provide the medical justifications for these selection criteria for the research trials. Overall, the authors agree with my own recommendations on these three points; that although medical justification currently does not support the use of donor ovum, this may be alleviated in the future, that 'it is inappropriate and unjust to exclude single women and potential recipients with appropriate social support should be eligible for UTx', and that the use of deceased donors should be prioritised 'if similar or superior outcomes are demonstrated'. As I also acknowledged, the authors note that the scarcity of deceased donors is a major limitation, and I welcome the news that the UK team are pursuing research into bioengineered uteri. Although not yet a realistic option, bioengineered uteri will overcome the concerns that I, and others, have raised about living donation.3 The thoughts of the UK team on the other two selection criteria that I also raised in my article would be welcomed.

What becomes apparent from the original article and the response letter, is that there is an ongoing tension between medical justifications for selection criteria, and legal and ethical justifications. In my article, the legal and ethical justifications for selection criteria were discussed, and the authors' response engages with the medical justifications. This is understandable considering the different expertise and viewpoints from which we are writing. It is not disputed that medical justifications for selection criteria that support the best interests of the participants are not appropriate, rather that as an outside (non-medical) observer of uterus transplantation, greater engagement by the medical community with the legal and ethical principles and other stakeholders should be embraced. Interdisciplinary approaches are welcomed and encouraged, particularly in the sphere of reproductive medicine, where medicine, ethics, law, religion and cultural perspectives all have a role to play. It is recognised that the UK team have engaged with non-medical stakeholders,4 and I hope that this continues, both within the UK and with other teams worldwide.

#### References

- 1 Hammond-Browning N. UK criteria for uterus transplantation: a review. BJOG 2019;126: 1320-6
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- 3 Williams NJ. Should deceased donation be morally preferred in uterine transplantation trials? Bioethics 2016;30:415-24.

4 Jones BP, Williams NJ, Saso S, Thum M-Y, Quiroga I, Yazbek J, et al. Uterine transplantation in transgender women. BJOG 2019; 126:152-6.

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Re: Rethinking the time interval to embryo transfer after uterus transplantation - DUETS (Dallas **UtErus Transplant Study)** 

We read with great satisfaction and interest the commentary by Johannesson et al. entitled Rethinking the time interval to embryo transfer after uterus transplantation - DUETS (Dallas UtErus Transplant Study). In this commentary, the authors recommended a deceased recipient graft time after uterus transplantation (UTx) to reduce the risks and long-term side effects of immunosuppression, especially in the time from transplant to embryo transfer (ET).

The first successful live birth after UTx was achieved in 2014 in Sweden.<sup>2</sup> A waiting period of 12-18 months for ET after UTx was initially planned in the Swedish protocol, based on other solid organ transplant recipients.3 However, UTx is a life-enhancing rather than lifesaving procedure, and an ephemeral transplantation that differs from vital organ transplantations requiring longterm graft function for survival. Because UTx has a different purpose to that of vital organ transplantation, new criteria for pregnancy in UTx should be considered based on risks to the recipient and fetus, and the adequacy of graft function. Therefore, we fully agree with the comment of Johannesson et al. that 'the transplant-to-ET interval should differ from recommendations in other

organ and vascular allograft transplantations'.

The group in Dallas reported the first live birth after UTx in the USA with a 6-month interval from transplant to ET, and further shortened the recipient graft time by immediate hysterectomy after delivery.4 Based on their experience, they discussed several key areas in which to decrease the time frame, including embryo generation, endometrial preparation, recovery after surgery, graft function, teratogenicity due to immunosuppressants, risks of acute rejection, viral infection that may cause fetal disorder and premalignant lesions, and a second pregnancy attempt to minimise the risk of maternal mortality and morbidity. Regarding the timing of hysterectomy after caesarean section, before the first delivery in the USA, we strongly supported the Swedish view that hysterectomy should be performed at least a few months after delivery to ensure that the delivered baby is healthy and allow the uterus to return to its normal size. Although simultaneous hysterectomy after caesarean section may be more complicated and may result in more

bleeding compared with regular abdominal hysterectomy, it is not a difficult procedure for a skilled surgeon. Therefore, hysterectomy at delivery appears reasonable to decrease the burden on a recipient by avoiding relaparotomy and longer-term immunosuppressant therapy. Moreover, shorter intervention and observation periods in clinical trials will reduce the costs of immunosuppressants and examinations, which is beneficial for patients and researchers.

The 'patient-centered criteria' to determine the timing of ET recommended by the authors are not necessarily based on current established evidence, but the achievements using these criteria by the authors and other teams worldwide have great potential for yielding novel criteria for the waiting period between transplantation and ET that differ from those for conventional organ transplantation. Therefore, this commentary on the time interval to ET after UTx and shortening of the recipient graft time is particularly important for decreasing the burden on recipients. This concept requires further discussion for future UTx.

#### References

- 1 Johannesson L, Wall A, Putman JM, Zhang L, Testa G, Diaz-Garcia C. Rethinking the time interval to embryo transfer after uterus transplantation – DUETS (Dallas UtErus Transplant Study). *BJOG* 2019;126:1305–9.
- **2** Brännström M, Johannesson L, Bokström H, Kvarnström N, Mölne J, Dahm-Kähler P, et al. Livebirth after uterus transplantation. *Lancet* 2015;385:607–16.
- **3** Johannesson L, Kvarnström N, Mölne J, Dahm-Kähler P, Enskog A, Diaz-Garcia C, et al. Uterus transplantation trial: 1-year outcome. *Fertil Steril* 2015;103:199–204.
- **4** Testa G, McKenna GJ, Gunby RT Jr, Anthony T, Koon EC, Warren AM, et al. First live birth after uterus transplantation in the United States. *Am J Transplant* 2018;18:1270–4.

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The authors of the original article were invited to reply, but did not feel that a response was necessary.

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