

## Successful retrieval of oocytes from renal transplant recipient followed by surrogacy

Sir,

Reproductive capacity is affected in women with end-stage renal disease by reducing the sexual desire and causing abnormalities of hypothalamic–pituitary–ovarian axis. Renal transplantation is the treatment of choice for end-stage renal disease and it results in good recovery of reproductive function. But the renal transplant patients are high-risk pregnant patients with life-threatening risk to mother, fetus, and graft. Pregnancy in these patients is challenging due to the risk of adverse maternal complications of preeclampsia, hypertension, gestational diabetes, urinary tract infections, teratogenic effects of immunosuppressive treatment, risk of deterioration of allograft function or acute rejection, and risk of adverse fetal outcomes of premature birth, low birth weight, and small for gestational age infants. Hence, preconception counseling followed by surrogacy may be a better and safer option, especially if they have hypertension, proteinuria, graft dysfunction, and are taking potentially teratogenic drugs.

We report a case of a 34-year-old woman post renal transplant, who came to our outpatient department with primary infertility. The patient had undergone renal transplant for end-stage renal disease due to chronic glomerulonephritis and was on triple therapy – cyclosporine A, methylprednisolone, and mycophenolatemofetil. After 3 years of transplant, the patient had stable renal function with serum creatinine up to 1.7–1.9 mg/dL. We had advised the hormonal profile and the ultrasound pelvis. Serum hormonal measurements were as follows: anti-mullerian hormone: 2.3 ng/mL, follicle-stimulating hormone: 6.4 IU/mL, luteinizing hormone: 4.7 mIU/L, estradiol: <38 pg/mL, prolactin: 18.5 ng/mL, and thyroid-stimulating hormone 2.5 pg/mL. Ultrasound showed bilateral normal sized ovaries with normal uterus. The husband's semen analysis was normal.

After discussion with nephrologist, in view of the above medical situation, we recommended self-egg surrogacy to the couple. Controlled ovarian stimulation was done with highly purified menotrophin HMG 225 IU (Menotas HP; Intas Pharmaceuticals Ltd, India). After 7 days of stimulation, transvaginal scan showed nine good follicles of 14 mm size in both ovaries. After that, daily subcutaneous injection of GnRH antagonist, 0.25 mg cetrotorelix (Cetrotide; Merck Serono S.p.A, Italy), was added. When follicles reached 18 mm, GnRH agonist 1 mg inj. leuprolide acetate (Lupride; Inca Sun Pharmaceutical Industries Ltd was given to trigger ovulation to prevent ovarian hyperstimulation syndrome (OHSS). Preanesthesia checkup was done. Low-dose propofol was used for

general anesthesia with hydrocortisone. Fluid overdose and nonsteroidal anti-inflammatory drugs were avoided. Transvaginal oocyte aspiration of both ovaries was performed before 36 h, under ultrasound guidance, using Wallace OPU needle and Cook's Gamete buffer media. We retrieved five oocytes from the right ovary and three oocytes from the left ovary, which were fertilized in the laboratory in Cook's fertilization media. Embryos were further cultured in cleavage media. Six good embryos (grade A) were formed, out of which three embryos were transferred in the surrogate after preparing with long protocol method of GnRH agonist 0.5 mg inj. leuprolide acetate (Lupride; Inca Sun Pharmaceutical Industries Ltd.) and three embryos were frozen in one vial. After 14 days of luteal support, beta HCG was done which came positive. Ultrasound was done after 2 weeks of beta HCG that showed intrauterine twin live pregnancy of 6 weeks. Antenatal period was uneventful. She delivered two healthy babies at 36 weeks.

The post-renal transplant pregnancy may expose both mother and fetus to risk of adverse outcomes. Prepregnancy counseling with the potential risks will enable pregnancy planning and help parents make an informed decision. A multidisciplinary approach by transplant nephrologist and maternal–fetal medicine is essential throughout pregnancy and can result in good outcomes for mother and infant.<sup>[1]</sup>

Renal transplant recipients are high-risk patients who require special care and counseling starting from peritransplant and preconceptional period to their postpartum period.<sup>[2]</sup> There were 15% miscarriages in the first trimester and 8% in the second trimester. The reported incidence of hypertension in transplant recipients was 52%–69% and the incidence of preeclampsia was between 24% and 38%. New-onset diabetes after transplantation is reported to occur in 4%–25% and urinary tract infection in 20%–40%. For patient with stable graft function 1 year after transplantation, the risks due to pregnancy are dependent on the level of graft function and presence of coexisting hypertension and proteinuria. Acute rejection is less likely in cases of stable renal function but may be observed in 6% with graft loss in 2% of the cases.<sup>[1–3]</sup> Teratogenic medications need to be discontinued in advance of pregnancy. This includes mycophenolatemofetil, angiotensin converting enzyme inhibitors, and angiotensin receptor antagonists.<sup>[2]</sup> Fetal complications reported mainly are low birth weight (20%–30%) and prematurity (45%–60%).<sup>[4]</sup>

Thus, surrogacy is a viable, and safe alternative to start families for patients with medical comorbidities precluding pregnancy in post-renal transplant patients.

### Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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### Conflicts of interest

There are no conflicts of interest.

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