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Case Report

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Pregnancy in renal transplant recipient, management and follow up

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Abstract

Renal transplantation is the treatment of choice for end stage kidney disease. It gives better quality of life and patient survival than hemodialysis. Renal transplant ladies regain fertility within six months after renal transplantation. Pregnancy is allowed in the most of guidelines after one years of rejection free renal transplant period. Immunosuppressive drugs are crucially used even during pregnancy so, we try to minimize the risk of teratogenicity by using azathioprine, Calcineurin inhibitor and steroid.

Hereby we report a case of pregnant transplant lady, received sirolimus and Mycophenolate Mofetil during unplanted pregnancy. We discuss her outcome in spite of the risk of teratogenicity. We represent an image of 4D ultrasound showing the fetus beside the transplanted kidney.

Introduction

Sirolimus is an immunosuppressive drug of Mammalian Target Of Rapamycin Inhibitors (mTORi) group. It is contraindicated to use during pregnancy [1]. Effective contraception should be initiated before therapy, during therapy, and for 12 weeks after therapy has been stopped [2]. Animal and limited human studies have raised concerns about safety of in utero exposure to Mycophenolate Mofetil (MMF) and Sirolimus (SRL) in transplant recipients. A higher incidence of structural malformations was seen with MMF exposures during pregnancy compared to the overall kidney transplant recipient offspring, while no structural defects have as yet been reported with early pregnancy sirolimus exposures [3].

We report a case of renal transplant lady get pregnancy while using SRL and MMF

Case report

The A 20-year-old lady had a successful renal transplantation from her mother on November 2001 and was treated with sirolimus/prednisolone/Mycophenolate Mofetil (MMF) according to the standard regimen at that time [4].

One year later, she had been married and so, we change immunosuppressive drugs for fear of teratogenicity. She stopped sirolimus and Mycophenolate Mofetil and start tacrolimus and azathioprine for three months prior to planned pregnancy. During these three months, she received oral contraceptive pills. After that she got pregnant and continued on prednisolone, tacrolimus and MMF during pregnancy.

In 2004, she delivered a single mature viable boy. She enjoyed a perfect graft function during pregnancy, delivery and puerperium. She used a short course of Bromocriptine to suppress lactation.

Mrs. M. felt more comfortable with her old immunosuppressive regimen and asked to resume sirolimus and MMF. We obeyed her desire with frequent follow up of renal function and advised her to visit her gynecologist to start suitable contraceptive method.

In 2007, during her routine outpatient clinic visit, she complaint of secondary amenorrhea. Pelvic ultrasound revealed right ovarian cyst 5 X 6 cm and intrauterine gestational sac of six weeks' duration. We were in dilemma because of possible teratogenicity of sirolimus and MMF, the presence of sizable ovar-

ian cyst and her desire to continue pregnancy. We immediately shift her to tacrolimus and azathioprine plus the already taken prednisolone. Chorionic villus biopsy, 3D ultrasound and amniocentesis were normal. Ultrasound guided diagnostic aspiration for ovarian cyst was serious fluid. She continued pregnancy till thirty-four weeks' gestational age when she underwent caesarian section. Her daughter was thoroughly examined by neonatologist. The girl was normal in spite of intrauterine growth retardation.

In 2011, Mrs M. gained weight with body mass index sixty kg/m^2. She experienced uncontrolled type 2 diabetes mellitus, sever systemic hypertension. She underwent liposuction surgery and so, sirolimus was stopped for the third time. She is subjected to successful healthy diet regimen that leaded to loss of ninety-kilogram body weight with better control of blood sugar and pressure.

She was regularly followed up in our outpatient clinic till march 2020 when SARS-COV pandemic occurred. Through that period, she resumed sirolimus plus maintaining on prednisolone and MMF. She experienced perfect graft function and well controlled blood glucose with no systemic hypertension.

During COVID pandemic, we decided to let our patients send their laboratory results with one of their relative who took the immunosuppressive medications to them without attending personally for the fear of exposure to infection during transportation or over crowdedness of outpatient clinic.

Mrs. M. phoned me in December 2020. She told me that she was pregnant for the third time. We advised her to stop MMF, SRL and start tacrolimus at dose of 0.05 mg/kg/day and azathioprine in dose of 2 mg/kg

There were three doctors of three specialties following her up. The obstetrician cared with the baby, doing 4D fetal sonography at gestational age 20 & 32 weeks (Figure 1) and routine 2D monthly follow up of fetal growth and maturation. The pulmologist care of her lung condition and progress of COVID without doing x-ray or computerized tomography. The nephrologist who deal with the immunosuppressive drugs and renal function. The clinical pharmacist`s role was to check drug-drug interaction and avoid teratogenic and nephrotoxic drugs.

At gestational age 35 weeks, her pregnancy ended by caesarian section in August 2021. Her baby`s body weight was 1.75 kilograms. He experienced jaundice at day 3 with serum bilirubin 18 mg/dl. He need incubator for one week and finally recovered.

Discussion

Renal transplantation is the treatment of choice in all patients with end-stage kidney disease [5]. Recipient Ladies usually regain fertility six months after renal transplantation [6]. There is scientific agreement that pregnancy should be postponed at least one years after renal transplantation [7] not all maintenance immunosuppressive drugs are safe to use during pregnancy. A typical MMF embryopathy pattern became recognized. It consists of three affected anatomical regions: Ears, eyes and lip/palate [8] while use of SRL is safe in early pregnancy. For the best of my knowledge, no human case used SRL during late pregnancy. Our case used SRL and MMF before diagnosis of pregnancy. She was shifted to Tac and Aza in early pregnancy. 4D ultrasonography encouraged us to continue pregnancy. Finally she has fruitful outcome for her and her baby.

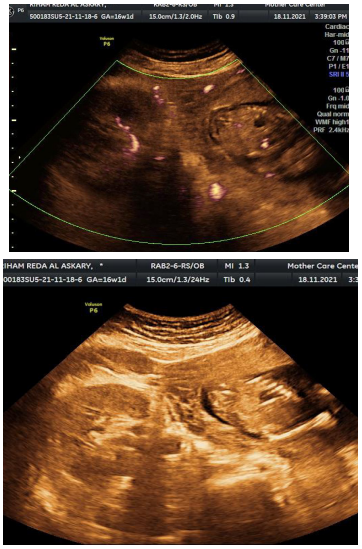

Figure 1:

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