

# Contraception and Child Birth in Kidney Transplant Patients: What Are We Missing as Physicians?

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## Abstract

**Objective:** The primary aim of our study was to evaluate the knowledge of young female patients about pregnancy and contraception after kidney transplantation and to reveal the role of physicians in patient information processes. The secondary aim was to determine the pregnancy outcomes.

**Materials and Methods:** Women who were not older than 40 years at the time of transplantation were included in the study. A questionnaire consisting of 30 questions was prepared.

**Results:** Sixty-six patients were examined. The mean age was 30.3 years, and the mean transplantation time was 49.8 months. Twenty patients (30.3%) were not offered contraception at the time of transplantation. Contraception was recommended to 46 patients. Only 19.5% of recommenders were physicians. When the questionnaire was administered, 23 of 29 sexually active patients were using contraception. Withdrawal (52%), condom (30.4%), and intrauterine device (IUD) (8.6%) were the preferred contraception methods. Nine patients conceived successfully. For all six live births, the mode of delivery was cesarean section. Five of them were premature. Three pregnancies are ongoing. When we asked the patients which drugs should not be used during pregnancy, 38 of them (57.5%) replied they did not know; 16, 7, and 5 patients reported that mycophenolate mofetil, mycophenolate sodium, and tacrolimus should not be used during pregnancy, respectively.

**Conclusion:** Before and after a kidney transplant, the recommendation of contraceptive choices and protection from pregnancy in female patients are being overlooked. We conclude that physicians mostly pay attention to this matter when the patient expresses a desire to become pregnant.

**Keywords:** Childbirth, contraception, kidney transplant, teratogenicity

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## INTRODUCTION

Menstrual irregularities and infertility are common in women with end-stage renal disease. Menstrual functions and fertility improve shortly after successful kidney transplantation (1). Women with unprotected sexual activity before transplantation are at a risk of unexpected pregnancy after transplantation. An unplanned pregnancy can cause serious problems for the mother and baby.

The primary aim of our study was to evaluate the knowledge of young female kidney transplant recipients about pregnancy and contraception after kidney trans-

plantation and to reveal the role of physicians in patient information processes. Our secondary aim was to determine the pregnancy outcomes of the patients.

## MATERIALS AND METHODS

The approval was obtained from the Clinical Researches Ethics Committee of the University of Health Sciences, Gazi Yaşargil Training and Research Hospital on March 08, 2019 with approval number 232. Patients' consents were obtained, then a questionnaire consisting of 30 questions was prepared. Women who were not older than 40 years at the time of transplantation, who had been transplanted at our center or another center but



were being followed up only at our hospital were included in the study. Male patients, female patients older than 40 years at the time of transplantation, and patients who were being followed up at another center were not included in the study.

### Statistical Analysis

Statistical Package for the Social Sciences software for Windows version 16.0 (SPSS Inc., Chicago, IL, USA) was used to analyze the data. The mean and standard deviation of the values were calculated. Statistical values were also expressed as frequencies and percentages.

### RESULTS

A questionnaire was applied to 66 patients who met the inclusion criteria. The mean age of patients was 30.3 years (range: 18-45; SD: 7.1), and the mean transplantation time was 49.8 months (range: 1-157; SD: 33.2). Sixty-six percent of the patients were transplanted at our hospital. 36.4% and 48.5% of patients were married at the time of transplantation and when the questionnaire was applied, respectively. Twenty patients (30.3%) were not advised of contraception at the time of transplantation; 15 were single and 5 were married.

Contraception was recommended to 46 patients. Recommenders were as follows: transplant coordinators (33 patients, 71.7%), physicians (9 patients [19.5%; nephrology physicians: 6; transplant surgeons: 2; gynecologist: 1]), nurses (3 patients, 6.5%), and another patient (1 patient, 2.2%). Contraception was recommended before the transplantation to 3 patients (6.5%), before the first discharge after the transplantation to 37 patients (80.4%), and during the follow-up period to 6 patients (13%). No recommendations were made with respect to the types of contraception methods to 48% of patients. Thirty-five patients (76%) were advised not to conceive for the first 2 years. Forty-three patients were sexually inactive at the time of transplantation. Twenty-two of 23 sexually active patients were protected from pregnancy after transplantation. Contraception methods used were as follows: withdrawal in 11 patients (50%), condom in 8 patients (36%), and intrauterine device (IUD) in 1 patient. Two patients were infertile because they had undergone a gynecological operation in the past. When the questionnaire was applied, 29 patients were sexually active. Twenty-three patients were protected. Withdrawal 52% (n=12), condom 30.4% (n=7), and IUD 8.6% (n=2) were the preferred contraception methods; 2 patients were infertile because they had undergone a gynecological operation.

Twelve patients wanted to get pregnant after the transplant. All patients consulted their doctors first, who approved 11 of them for conception. Nine of them succeeded, and the efforts of two continued. Pregnancy was confirmed in a median of 3 months (1-18). For all six live births, the mode of delivery was cesarean section. Five of them were premature (<38 weeks) and one was at term. For three patients, pregnancy is ongoing. Fifty-seven patients (86.3%) were still using mycophenolate mofetil (MMF) or enteric-coated mycophenolate sodium (EC-MPS). When we asked patients which drugs they should avoid during pregnancy, 38 of them (57.5%) said they did not know; 16, 7, and 5 patients reported that they thought MMF, EC-MPS, and tacrolimus should not be used during pregnancy, respectively.

### DISCUSSION

When planning a pregnancy, the time after transplantation and renal functions should be evaluated carefully (2, 3). The traditional proposal for conception time is two years after transplantation (4). The consensus report of the Women's Health Community of Practice of the American Society of Transplantation states that the waiting period of 2 years is usually because of the rejection risk, and the rates of rejection are lower in the first year with potent immunosuppressive therapies. It is reported that it may be unnecessary to wait for 2 years for pregnancy after successful transplantation and follow-up period (5). Kim et al. (6) reported that pregnancies that occur within the first year after transplantation might be safe. Nonetheless, it is safer to have a postoperative 1-year follow-up without rejection or other serious problems. All women who are sexually active during transplantation should be offered contraception at least until the end of the first year. Patients who want pregnancy after the first year of renal transplantation should be examined in all aspects. There should be no episode of rejection in the last year. Graft kidney function should be stable (serum creatinine <1.5 mg/dL, normal proteinuria or minimal proteinuria). Doses of immunosuppressive drugs should be stable. It is possible to perform a biopsy before pregnancy planning in patients with rejection in the first year (5).

While preparing for kidney transplantation, it is possible that the transplant team members, who have to pay attention to several aspects, might neglect the contraceptive proposal. It was reported in the studies by Eide et al. (7) and Guazzelli et al. (8), respectively, that 37% of Norwegian women and 25% of Brazilian women with kidney transplantation did not receive advice on contraceptive use in preoperative and early postoperative periods.

In our study, the proportion of patients who were not offered contraception before and after transplantation was 30.3%. One-third of our patients were transplanted at another center. It was found that physicians recommended contraception at a low rate (19.5%).

### Main Points

- The recommendation about prevention of pregnancy in female kidney transplant recipients is being overlooked.
- The interest of transplant physicians on this subject is low.
- We found that our patients did not have enough information about the potential teratogenic effects of drugs and made wrong choices about contraceptive methods.

It is unclear which contraception method should be preferred. Barrier methods are more effective in preventing infection. The consensus report of the American Society of Transplantation (5) does not recommend levonorgestrel radioimmunoassay because of the risk of pelvic infection; however, it was accepted in a subsequent review (9). European guidelines have no specific recommendations for the choice of contraceptive method (10). We found that 48% of patients who were advised for contraception were not informed about contraceptive methods. It was found that the method of withdrawal, which is not considered an effective and safe method, was highly preferred at the time of transplantation and administration of questionnaire (50% and 52.1%, respectively). Of the 11 patients who were approved by the transplant physicians, 9 were able to get pregnant within an average of 3 months (1-18 months). The pregnancy was ongoing in three patients. None of the pregnancies resulted in miscarriage or stillbirth. There was no information about the specific obstetric causes of cesarean section and premature births. None of the patients had impaired renal function in the postpartum period.

Although 86.3% of our patients were using MMF or EC-MPS, 65.1% of patients had incomplete or incorrect information about the drugs to be used during pregnancy.

## CONCLUSION

We conclude that before and after a kidney transplant, the recommendation about preventing pregnancy in female patients is being overlooked. Physicians mostly pay attention to this matter when the patient expresses a desire to become pregnant. We found that our patients lacked information about the potential teratogenic effects of drugs and made wrong choices about contraception methods. Physicians should be more concerned with the education of patients so that patients can prevent themselves from unintended and risky pregnancies.

**Ethics Committee Approval:** Ethics committee approval was received for this study from the Clinical Researches Ethics Committee of University of Health Sciences, Gazi Yaşargil Training and Research Hospital (Approval Date: March 08, 2019; Approval Number: 232).

**Informed Consent:** Written informed consent was obtained from the patients who participated in this study.

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