

Pregnancy Outcome of Renal Transplant Recipients: Analysis of Nine Patients

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OBJECTIVE: Pregnancy in renal transplant recipient was considered unsafe in the past. To date, these patients have successful pregnancy outcome. In this study, we aimed to analyze the outcome of pregnancy in kidney transplant recipients and the consequences on renal function.

STUDY DESIGN: Retrospective analysis

RESULTS: We found that the mean gestational age at delivery for patients were 35.22 weeks and 55.5% patients had preterm delivery and this result is higher than normal pregnant population.

CONCLUSION: Pregnant women who renal transplant recipient have higher risk for preterm labor and hypertension compared normal pregnant women.

Key Words: Renal transplantation, Pregnancy outcome, Chronic renal disease, Renal disease in pregnancy

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Introduction

Pregnancy in renal transplant recipient was considered unsafe in the past. This concept has been changed over the past twenty years. The first reported successful pregnancy in a renal transplant recipient occurred in a kidney recipient from an identical twin sister in 1963.¹ The number of patients receiving renal transplantation and incidence of pregnancy in the renal transplant patient population has increased over the past two decade.²⁻⁵ Immunosuppressive therapies have improved the survival and quality of life in organ transplant patients.⁶

The aim of this study was to analyze the outcome of pregnancy in kidney transplant recipients and the consequences on renal function, as well as the complications in the patients.

Material and method

In this study, we retrospectively analyzed all of the preg-

nancies between January 2001 - May 2013. We evaluated patients with known renal transplant recipient and excluded the patients who are not fully followed at our institute during pregnancy. Additionally we followed the patients postoperatively sixth weeks and by an office visit we checked the patients for complications. Patients' demographics, duration transplantation, duration of pregnancy, birth weight, pre-gestational, antenatal and postnatal laboratory values, APGAR scores (1st and 5th min.), perinatal and maternal complications, comorbid diseases, and pregnancy outcome were recorded.

For the statistical analysis of the data, the Statistical Package for the Social Sciences (SPSS) 17.0 (SPSS Inc., Chicago, IL, USA) was used.

Results

We retrospectively analyzed 20.181 pregnancies and found 9 patients with known renal transplantation recipient. The median age of these nine patients was 31.66 (ranging between 24 and 37). Three of these 9 patients were primiparous (33.3%). The mean gestational age at delivery for patients was 35.22 weeks and only five patients (5/9) had preterm delivery. One patient had baby as classified very preterm (28th weeks). While evaluating the patients it was obvious that one patient (1/9) had hypertension and one patient had hyperbilirubinemia. There were no medical complications in seven patients (7/9). The median duration of transplantation at the point of delivery, these nine patients were 5.86±2.40 (ranging between 2 and 9).

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Cesarean section was the preferred way of delivery (8/9). The most indication of cesarean delivery was non-reassuring fetal heart rate (4/8). There was no seen low Apgar score any babies. The mean values fifth minute Apgar scores were 9.77 ± 0.44 (ranging between 9 and 10). Only one patient (1/9) had postoperative complication, elevated blood creatinine level, and needed dialysis. All of these details are given at table 1.

We evaluated blood counting and biochemical analysis in pregnancy. All parameters were normally except six patients had anemia. We also evaluated renal function of the five patients before pregnancy, during pregnancy and after pregnancy. Although not statistically significant, we detected a marked increase proteinuria in one patient (1/5). Details are given at table 2.

Discussion

The effects of pregnancy on renal transplant recipients have been widely described. However, its impacts on the mother, the fetus, and the graft are still debated.²⁻⁵ The possibility of a term pregnancy is one of the benefits of solid organ transplantation for women.

In the medical literature, there are several reports dealing with pregnancies of renal transplant recipient that complicated preterm birth. The preterm birth rate is higher than compared normal population (12.5%). Wielgos et al. have been reported that preterm birth is 42% in renal transplant recipient.⁷ Furthermore, Khan et al. found that mean gestational age is 36.1 weeks.⁸ In this study, similarly, we found that the mean gestational age at delivery for patients were 35.22 weeks and 55.5% patients had preterm delivery.

Pregnancy after kidney transplantation is becoming relatively common and maternal complications are higher than in the general population.⁹ A meta-analysis, Deshpande et al. have been reported various medical or obstetrics complications including miscarriage (14.0%), stillbirth (2.5%), ectopic pregnancy (0.6%), preterm birth (45.6%), low birth weight (46.1%), maternal hypertension (54.2%), preeclampsia (27.0%), and diabetes mellitus (16.0%).¹⁰ Especially preeclampsia and maternal hypertension are most common medical complication in these patients. We didn't find parallel results for hypertension and preeclampsia. While evaluating the patients it was obvious that one patient had hypertension and one patient had hyperbilirubinemia. There was no detected preeclampsia.

Table 1: Demographic, clinical and laboratory features of the patients

	Mean \pm sd	Range
Maternal Age (years)	31.66 \pm 3.74	24-37
Parity	0.33 \pm 0.50	1-3
Gestational weeks at delivery	35.22 \pm 2.90	28-37
Birth weight (gr)	2415.5 \pm 760.79	810-3330
Apgar scores (5th min)	9.77 \pm 0.44	9-10
Hemoglobin (gr/dL)	10.01 \pm 2.46	8.10-15.80
Hematocrit (%)	28.62 \pm 7.58	22.2-46.1
Platelet (μ L)	200.555 \pm 40.258	162.000-297.000
Blood urea nitrogen (BUN)	17.00 \pm 6.79	9.05-30.90
Creatinine	0.98 \pm 0.40	0.48-1.90
Alanine aminotransferase (ALT)	37.46 \pm 77.65	7.0-244.0
Aspartate aminotransferase (AST)	26.79 \pm 21.61	14.0-84.0
Total protein	5.63 \pm 0.92	4.31-6.90
Albumin	3.22 \pm 0.58	2.22-4.30

Table 2: Serum proteinuria levels (mg/24h) of the complicated five patients

Patient no	Before pregnancy	During pregnancy	After pregnancy
1	17	1139	71
2	186	1059	591
3	586	292	183
4	65	236	152
5	188	603	101

Pregnancy effect on allograft kidney function is important issue. Renal function, as determined by 24-hour creatinine clearance and protein excretion, should be assessed monthly. Approximately 15% of transplant recipients will exhibit a significant disrupt in renal function in pregnancy.¹¹ Similarly, we found renal functional worsening in one patient (Table 2). In this patient, renal functions have been showed slightly deterioration two years after pregnancy.

Conclusion

Renal transplant recipients who have stable creatinine levels, insignificant proteinuria, and normal blood pressure or controlled hypertension may become pregnant, and they can have successful pregnancies. However, pregnant women who renal transplant recipient have higher risk for preterm labor and hypertension compared normal pregnant women.

Renal Transplant Alıcılarının Gebelik Sonuçları: Dokuz Hastanın Analizi

AMAÇ: Geçmişte renal transplant alıcılarında gebeliğin güvenli olmadığı düşünölmekteydi. Günümüzde ise bu hastalarda başarılı gebelik sonuçları elde edilmektedir. Bu çalışmada renal transplant alıcılarının gebelik sonuçlarını ve renal fonksiyonlarını değerlendirmeyi amaçladık.

GEREÇ VE YÖNTEM: Retrospektif analiz.

BULGULAR: Bu hastalar için doğumda ortalama gebelik haftaları 35,22 hafta idi ve hastaların %55'inin preterm doğum yaptığını saptadık. Bu sonuçlar normal gebe popölasyonundan yüksektir.

SONUÇ: Renal transplant alıcısı gebeler normal gebeler ile karşılaştırıldığında daha yüksek preterm doğum ve hipertansiyon riskine sahiptir.

Anahtar Kelimeler: Böbrek transplantasyonu, Gebelik sonucu, Kronik renal hastalık, Gebelikte renal hastalık

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