



Genitourinary Tumor Following Kidney Transplantation: A Multicenter Study

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ABSTRACT

Renal transplantation has been advocated as the treatment of choice for end-stage renal disease. Immunosuppression increases the incidence of cancer and promotes the growth of neoplasms in solid organ recipients. There have been a few reports on the incidence of cancer from transplant registries. It is difficult to precisely compare the incidence with that in the general population using data from small, single-center studies. Thus, we sought to study the prevalence of genitourinary cancer development in Iranian renal transplant recipients. We collected data from 5 kidney transplant centers in Iran between 1984 and 2008, seeking to detect the incidence, type, and outcome of cancers after kidney transplantation. Only histologically confirmed tumors, which occurred after renal transplantation, were included in the analysis. Of the 5532 patients who underwent kidney transplantation, genitourinary tumors were detected in 21 subjects (0.38%), namely, 12 males and 9 females. Transitional cell carcinoma (TCC) of the bladder, the most common genitourinary cancer ($n = 7$) was followed by renal cell carcinoma (RCC; $n = 5$), ovarian cancer ($n = 3$), breast cancer ($n = 3$), prostate cancer ($n = 1$), seminoma ($n = 1$), and uterine cancer ($n = 1$). The overall mean age of the patients was 46 ± 12 years (range, 19–72 years) and the median time to diagnosis after transplantation was 72 months (range, 4–240 months). Seven patients died during the follow-up. There was a male predominance among TCC of the bladder and RCC (5:2 and 4:1, respectively). In conclusion, TCC of the bladder was the most common genitourinary tumor following kidney transplantation. It was predominant in male patients.

THERE IS AN INCREASED incidence of tumors of the genitourinary tract among kidney graft recipients.¹ Limited data are available on malignancy after renal transplantation in Iran.^{2,3} Herein, we have reported our experience with genitourinary carcinoma among Iranian renal transplant recipients at 5 institutions that perform large numbers of transplantations.

MATERIALS AND METHODS

In the current study, we collected data from 5 kidney transplant centers in Iran between 1984 and 2008, seeking to detect the incidence, type, and outcome of cancers after kidney transplantation. Only histologically confirmed tumors, which occurred after renal transplantation, were included in the analysis.

RESULTS

Of the 5532 patients who underwent kidney transplantation, genitourinary tumors were detected in 21 subjects

(0.38%), including 12 males and 9 females. The predominant genitourinary cancer was transitional cell carcinoma (TCC) of the bladder ($n = 7$), followed by renal cell carcinoma (RCC; $n = 5$), ovarian cancer ($n = 3$), breast cancer (1 male and 2 females), prostate cancer ($n = 1$), seminoma ($n = 1$), and uterine cancer ($n = 1$). Four RCCs were in the native kidney and 1 in the transplanted kidney. The overall mean age of the patients was 46 ± 12 years (range, 19–72 years) and the median time to diagnosis after transplantation was 72 months (range, 4–240 months). Seven patients died during the follow-up. There was a male

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predominance among TCC of the bladder and RCC (5:2 and 4:1, respectively).

DISCUSSION

In our series, TCC of the bladder and RCC were the most common genitourinary cancers after renal transplantation. An increased incidence of bladder cancer had been reported after kidney transplantation in Taiwan.⁴ The tumors in the native kidneys were discovered incidentally. The native kidneys of renal transplant patients should be examined by ultrasonography annually because they are at greater risk for RCC.⁵ Older age and male gender were risk factors for development of TCC and RCC in our patients.

In conclusion, urological malignancies, especially TCC, are an important complication in renal transplantation. Careful urologic screening is indicated for renal transplant recipients, especially older age subjects and men. With

appropriate treatment, genitourinary tumors at an early stage show a good prognosis.

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