

Kidney Transplantation

Frequency of Infectious Skin Lesions in Kidney Transplant Recipients

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ABSTRACT

Introduction: This study was performed to evaluate the frequency of skin lesions in kidney transplant recipients.

Materials and Methods: A total of 681 kidney transplant recipients were followed at Shaheed Labbafinejad transplant center in Tehran, Iran. Skin lesions were evaluated, and diagnoses were made clinically and confirmed by lesion smear, tissue biopsy, tissue culture, and serologic examinations, as indicated.

Results: Skin lesions were found in 54 patients (7.9%), and their frequencies were as follows: dermatomal herpes zoster (18 patients, 2.6%, 13 men and 5 women), herpes simplex infection of face and lips (15 patients, 2.2%, 5 men and 10 women), chickenpox (6 patients, 0.9%, 5 men and 1 woman), Kaposi's sarcoma (5 patients, 0.7%, 3 men and 2 women), warts (4 women, 2 of whom had genital warts), pyoderma gangrenosum (1 man, 0.14%), multiple fungal abscesses of the leg (1 man, 0.14%), mucormycosis (1 man, 0.14%), and molluscum contagiosum (1 man, 0.14%). Moreover, 2 women (0.3%) had generalized herpes simplex lesions.

Conclusions: Frequencies of herpes zoster (3.5%), herpes simplex (2.5%), and human papillomavirus (0.6%) infections in our kidney transplant recipients were low. We recommend that all kidney transplant candidates be evaluated and immunized for herpes zoster virus before transplantation, all herpetic-form lesions of these patients be reported to physicians (even mild lesions), and finally, that all human papillomavirus lesions be diagnosed and treated promptly to prevent more serious lesions such as malignancies.

KEY WORDS: skin lesion, kidney transplantation, varicella-zoster virus, herpes simplex, chickenpox, Kaposi's sarcoma

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Introduction

Cutaneous lesions are usually a significant problem in kidney transplant recipients. Factors such as climate and the patient's skin type have

been implicated as factors that influence clinical manifestations.⁽¹⁾ Immunosuppressive therapy, although it contributes to successful kidney transplantation outcomes, also increases the rate of nonmalignant and malignant skin lesions.^(2,3) There is also a correlation between duration of the immunosuppressive therapy and risk of acquiring squamous cell skin cancer and common viral warts, the latter of which is reported in up to 55% of patients with kidney allografts.⁽²⁾ Also, it has been suggested that human papilloma virus, the cause of warts, has a role in the etiology of squamous cell carcinoma in kidney allograft recipients.⁽⁴⁾ The risk of neoplasia in the first 10 years after transplantation is 14%, increasing to 40% after 20 years.⁽⁵⁾ Thus, any infectious skin disease should be taken seriously to reduce the risk of transformation into malignancy.

The prevalence and clinical characteristics of cutaneous lesions and their relation to malignancies in kidney transplant recipients, although previously reported in many studies, have not been elucidated in our region. In this study, we assess the prevalence and clinical spectrum of infectious lesions at Shaheed Labbafinejad Medical Center in Tehran, Iran.

Materials and Methods

A total of 681 kidney allograft recipients were assessed retrospectively. They had undergone kidney transplantation and were followed from April 2000 to March 2002 at Shaheed Labbafinejad Medical Center in Tehran, Iran. Follow-up was performed by the center's nephrologists and, in case of skin lesions, by infectious diseases specialists. Consultation with a dermatologist was on an as-needed basis. Cases of skin lesions were evaluated, and diagnoses

were made clinically. Diagnoses were confirmed by lesion smear, tissue biopsy, tissue culture, and serologic examinations, as indicated. The patients' clinical and demographic characteristics were collected and analyzed.

Results

Of 681 patients, 243 were female (35.7%), and 438 were male (64.3%; age range, 3 to 78 years). Overall, 54 patients (7.9%) had skin lesions. The frequencies of skin lesions were as follows: dermatomal herpes zoster (18 patients, 2.6%, 13 men and 5 women), herpes simplex infection of face and lips (15 patients, 2.2%, 5 men and 10 women), chickenpox (6 patients, 0.9%, 5 men and 1 woman), Kaposi's sarcoma (5 patients, 0.7%, 3 men and 2 women), warts (4 women, 2 of whom had genital warts), and pyoderma gangrenosum (1 man, 0.14%), multiple fungal abscesses of the leg (1 man, 0.14%), mucormycosis (1 man, 0.14%), and molluscum contagiosum (1 man, 0.14%). Moreover, 2 women (0.3%) had generalized herpes simplex lesions. Table 1 summarizes the time of onset, age at diagnosis, and treatments for the various lesions.

Discussion

Skin infections are common after transplantation but are rarely life-threatening. They constitute a significant nuisance to the transplant recipient and may be an indication of a serious systemic infection. The most frequent pathogens in infectious skin lesions include *Staphylococcus aureus*, herpes simplex virus, varicella-zoster virus, papillomaviruses, *Candida* species, and dermatophytes.⁽⁶⁾ The frequency of skin lesions in this study was 7.9%, of which 0.7% was due to Kaposi's sarcoma. The findings of this study disagree with those of other studies; for

TABLE 1. Time of onset, age at diagnosis, and treatments of the main lesions

	Kaposi's sarcoma	Herpes zoster	Chickenpox	Herpes simplex
Number of patients (%)	5 (0.7)	18 (2.6)	6 (0.9)	15 (2.2)
Age (range, year)	40 to 67	30 to 59	20 to 50	8 to 47
Sex (male/female)	3/2	13/5	5/1	5/10
Time of onset after transplantation (months)	6 to 11	1 to 15	3 to 11	1 to 11
Treatment	Discontinuing or decreasing of immunosuppressives	Acyclovir	Acyclovir	Acyclovir

example, Cohen and colleagues have reported a prevalence of 12% skin lesions in 580 kidney transplant recipients, most of which were squamous cell carcinoma and human papillomavirus infections.⁽⁷⁾

The most common viral skin infections are those caused by herpes simplex virus and varicella-zoster virus.⁽⁸⁾ The frequency of varicella-zoster virus infections in this study was 3.5%, which is lower than that of other studies, which have reported rates of 7% to 16%.^(6,9,10) This may be due to the different follow-up durations (about 2 years in our study versus an average of 5 years in other studies). The onset time of herpes zoster rash is reported to be 1 to 3 months after transplantation,⁽⁸⁾ while we had cases with onset after the 10th month.

The frequency of herpes simplex in this study was significantly lower when compared with other reports (2.5% versus 60%).⁽⁸⁾ This may be due to the rather short (2-year) follow-up of our study. In addition, transient and minimal lesions were not considered in our evaluation.⁽⁸⁾

The papillomavirus infection rate in this study was 0.6%. However, Bar and colleagues found this infection in 77% of patients with a graft survival of more than 5 years, and in 20% of those patients with a graft survival of less than 5 years.⁽⁴⁾ The low incidence of papillomavirus infection in our patients can be attributed to the low prevalence of this disease in our country, as well as to the short length of this study.

An association of papillomavirus DNA and squamous cell skin carcinoma has been found in the majority of kidney allograft recipients with squamous cell skin carcinoma.⁽¹¹⁾ Therefore, it seems that early diagnosis and treatment of human papillomavirus infection would prevent development of such serious lesions in these patients.

Shuttleworth and colleagues have reported cutaneous fungal lesions in 15% of kidney transplant patients,⁽¹²⁾ while a much lower prevalence (< 0.5%) was seen in this study. This may be due to differing geographic distributions of fungal infections.

Chickenpox was one of the more common diseases (with skin manifestations) in our patients. Chickenpox, which is reported in approximately 15% to 18% of patients,^(13,14) is associated with significant morbidity and mortality in immunocompromised children and adults. It is recommended that prior to

transplantation, patients be evaluated serologically, and vaccinated against varicella-zoster virus, if necessary.

Conclusion

Our data show that the prevalence of infectious skin lesions in our patients in Iran differs from that of other regions and necessitates further investigations. Although the rates were relatively low, we recommend that first, all patients with symptoms be examined for human papillomavirus infection (particularly genital warts) to prevent malignant deteriorations. Second, all patients should be informed and sufficiently educated with regard to herpetic infections (even minor ones like a cold sore) and should report them to their physician immediately. Lastly, prior to transplantation, patients must be evaluated serologically and vaccinated against varicella-zoster virus, when appropriate.

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