

Evaluation of the Psychosocial Effects of Long-Term Genital HPV Infection

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BACKGROUND/AIMS

Genital human papillomavirus (HPV) infection is one of the most common sexually transmitted diseases. This study purposed to evaluate the psychosocial effects of long-term genital HPV infection.

MATERIAL and METHODS

Overall, 77 male patients with genital HPV infection were included. The Dermatological Life Quality Index (DLQI), State-Trait Anxiety Inventory scales (STAI I-2), and the Beck Depression Inventory (BDI) were used to assess the psychological burden of patients. In addition, they were evaluated by a psychiatrist.

RESULTS

The mean age was 37.68 ± 11.67 . The mean duration of the disease was 9.74 ± 7.76 months. Overall, 51 patients (66.2%) had more than five lesions. The mean score of the DLQI scale was noted to be 4.58 ± 4.42 . Most patients (26; 33.8%) were classified as "small effect on patient's life," at a score of 2-5. STAI-I mean score was 41.74 ± 11.77 . Thirty-eight patients (49.4%) were noted to be highly anxious. According to the STAI-2 scale, the mean score was 42.69 ± 9.71 , and most patients (40; 51.9%) were noted to be highly anxious. The mean score of BDI was 16.43 ± 11.929 , and 27 patients (35.1%) were noted to be moderately depressive. The psychiatrist assessed 14 patients (18.2%) as needing psychiatric medication.

CONCLUSION

Generally, patients suffering from genital HPV for longer than 3 months are affected negatively psychosocially. Therefore, physicians should approach the patient with kindness, compassion, and patience. In addition, an expert psychiatrist's support should be sought if necessary.

Keywords: Dermatology life quality index, human papillomavirus, psychosocial effects

INTRODUCTION

Genital human papillomavirus (HPV) infection is a viral infection that is one of the most common sexually transmitted diseases in humans (1). HPVs are DNA viruses belonging to the *Papillomaviridae* family that can cause benign skin and mucosal lesions on the genital, anal, or oral mucosa, or may cause malignant lesions in various organs (2).

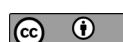
Patients with anogenital warts feel uncomfortable and are often ashamed of these lesions. They may resist consulting a physician, leading to delayed diagnosis. Furthermore, these patients may feel anxious or depressed (3, 4). Patients are consistently worried and anxious about developing anogenital cancers and its negative effects on their sex lives (5). Moreover, patients may have concerns regarding disease transmission and self-image, besides being embarrassed by the disease (4, 6).

This study evaluated the psychosocial effects of long-term genital HPV infection in men using the anxiety-depression tests, as well as a psychological evaluation by an expert psychiatrist.

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MATERIAL AND METHODS

This study included 77 male patients with genital HPV infection, lasting longer than 3 months, admitted to the outpatient clinic between December 2013 and May 2014. Patients over 18 years of age were included. The local ethics committee approved the study (November 12, 2013, 50687469-149I-2338-I3/I648-2499). All participants were informed regarding the study, and written consent was obtained.

All participants were evaluated by a dermatologist and a psychiatrist. Sociodemographic information, including age; smoking, alcohol, and drug use history; marital status; the number of sexual partners; educational status; working status; and the duration of the disease were recorded. A detailed anamnesis was obtained, and a careful dermatological examination was performed. Anamnesis included a history of genital warts, the existence of any extragenital warts, any co-existing sexually transmitted disease, or any medical treatments. Three validated questionnaires, namely the Dermatological Life Quality Index (DLQI), State-Trait Anxiety Inventory scales (STAI I-2), and Beck Depression Inventory (BDI), were used to assess patients' psychological burden. Patients were individually evaluated by an expert psychiatrist and were assessed using the Structured Clinical Interview for DSM-III-R (SCID I-2).

The Dermatological Life Quality Index (DLQI) is the first dermatology-specific quality-of-life instrument developed in 1994. It is a simple 10-question validated questionnaire. These 10 questions examine a patient's perception of the impact of skin diseases on different aspects of their health-related quality of life over the preceding week. The test is validated for adult dermatology patients aged 16 years and above.

Each question is scored on a 4-point Likert scale as follows: not at all or not relevant=0; a little=1; a lot=2; and very much=3. Scores of individual items (0-3) are added to yield a total score (0-30), wherein higher scores represent a greater impairment in patient's quality of life (7).

The Beck Depression Inventory (BDI) is an inventory including 21 items designed to assess the symptoms of depression as spec-

Main Points:

- Genital human papillomavirus (HPV) infection is one of the most common sexually transmitted diseases in humans.
- Patients with anogenital warts may feel uncomfortable, anxious or depressed. This study evaluated the psychosocial effects of long-term genital HPV infection in men using the anxiety-depression tests, as well as a psychological evaluation by an expert psychiatrist.
- Based on our results, HPV infections may affect a patient's quality of life, cause anxiety and depression, and may even cause psychosocial stress, thereby necessitating treatment.
- These patients should be approached with kindness, compassion, and patience to achieve treatment success. In addition, an expert psychiatrist's support can be pursued if necessary.

ified in the Diagnostic and Statistical Manual of Mental Disorders-Fourth Edition. The 21 items are scored on a 4-point Likert scale ranging from 0 (absent) to 3 (severe). The total score ranges from 0 to 63. The Turkish version of this test was developed by Hisli (8).

The State-Trait Anxiety Inventory (STAI) is a commonly used measure of trait and state anxiety. It can be used in clinical settings to diagnose anxiety and distinguish it from depressive syndromes. Moreover, it is commonly used in research as an indicator of caregiver distress. All items are rated on a 4-point scale from "almost never" to "almost always." It contains 40 items, and for each subtest, scores range from 20 to 80, with a higher score representing significant anxiety (9).

This test is a semi-structured interview to assess major axis I DSM-III-R diagnoses and is administered by a mental health professional. It is used to ensure that the major DSM-5 diagnoses are systematically evaluated. In addition, it can be used to characterize a study population in terms of current and previous psychiatric diagnoses (10).

Statistical Analysis

Statistical analyses were performed using the statistical software package Statistical Package for the Social Sciences for Windows 15.0 (SPSS Inc, Chicago, IL, USA). The normal distribution of data was assessed using the Kolmogorov-Smirnov test. Continuous and normally distributed variables were presented as means \pm standard deviations, and intra-group differences were investigated using the student's t-test. Continuous variables with non-normal distribution were expressed as medians (minimum-maximum), and differences between variables were analyzed using the Mann-Whitney U test. Categorical variables were expressed in percentages.

RESULTS

All the 77 patients were men with a mean age of 37.68 ± 11.67 years. Overall, 54 patients (70.1%) had a history of smoking. Only 2 patients (2.6%) had a history of drug abuse, whereas 33 patients (42.9%) had a history of alcohol use, and 33 patients (42.9%) described a history of extramarital sexual intercourse. Overall, 30 patients (39%) were single, whereas 47 (61%) were married. In addition, 76 patients (98.7%) graduated from at least high school, and 58 (75.3%) had a job, whereas 19 (24.7%) did not work. Eight patients (10.4%) had a history of genital warts. Extragenital warts were observed in 21 (27.3%) patients. None of the patients had any other sexually transmitted diseases. The mean duration of the disease was 9.74 ± 7.76 months. Overall, 51 patients (66.2%) had more than five lesions, and 68 patients (88.3%) had a history of taking medications for the disease. Nine patients (11.7%) had no history of treatment.

Upon review, no previous studies had explored the extent of lesion prevalence and the length of lesion duration. Therefore, we defined the term 'diffuse lesion' as those having more than five lesions and the term 'long-term lesion' as those having disease longer than 3 months.

The mean score of the DLQI scale was 4.58 ± 4.42 . The scores of the scale are presented in Table I. Most patients were classified as a "small effect on patient's life" at a score of 2-5 (26 patients,

33.8%). The STAI-I mean score was 41.74 ± 11.77 , and overall, 38 patients (49.4%) were highly anxious. The STAI-2 mean score was 42.69 ± 9.71 , with most patients (40; 51.9%) being highly anxious. Detailed STAI I-2 scores are illustrated in Table 2. The mean BDI score was 16.43 ± 11.929 , and 27 patients (35.1%) were moderately depressed, whereas most patients (37; 48.1%) had a normal mood. The BDI scores are presented in Table 3. Overall, 7.8% of patients had a history of psychiatric medication, and 9.1% were still taking psychiatric medication during the study. Finally, after evaluating all patients with the help of an expert psychiatrist and testing them by using the SCID I-2 tests, 63 patients (81.8%) were noted to have a normal mood and required no medication, whereas 14 (18.2%) required psychiatric medication.

Patients with a history of genital warts were noted to have a higher rate of worsening mental health compared with patients

TABLE 1. The scores of DLQI

DLQI	Frequency	Percentage	Valid Percentage	Increasing percentage
Unaffected	25	32.5	32.5	32.5
Little effect	26	33.8	33.8	66.2
Moderate effect	16	20.8	20.8	87.0
Very much affected	10	13.0	13.0	100.0
Total	77	100.0	100.0	

DLQI: Dermatology Life Quality Index

TABLE 2. STAI I-2 scores of patients

STAI-I	Frequency	Percentage	Valid Percentage	Increasing percentage
No anxiety	21	27.3	27.3	27.3
Little anxious	18	23.4	23.4	50.6
Highly anxious	38	49.4	49.4	100.0
Total	77	100.0	100.0	
STAI-2				
No anxiety	20	26.0	26.0	26.0
Little anxious	17	22.1	22.1	48.1
Highly anxious	40	51.9	51.9	100.0
Total	77	100.0	100.0	

STAI: State-Trait Anxiety Inventory

TABLE 3. BDI scores of patients

STAI-I	Frequency	Percentage	Valid Percentage	Increasing percentage
Normal	37	48.1	48.1	48.1
Little mental disorder	7	9.1	9.1	57.1
Borderline clinical depression	1	1.3	1.3	58.4
Moderate depression	27	35.1	35.1	93.5
Severe depression	5	6.5	6.5	100.0
Total	77	100.0	100.0	

BDI: Beck Depression Inventory

who had no history of genital warts ($p=0.001$). On the other hand, patients with a history of extragenital warts had less worsening of their mental health than patients with no history of extragenital warts ($p=0.006$). The mental health of patients with more than five lesions was worse than that of patients with fewer than five lesions ($p=0.02$). The mental health of patients with a history of any psychiatric medication use was worse than that of patients with no history of psychiatric medication use ($p=0.005$). Moreover, patients with a history of extragenital warts had a higher rate of having more than five lesions ($p=0.027$).

Patients with more than five lesions had a longer duration of lesions ($p=0.00048$). Patients with a history of psychiatric medication use had a higher rate of extensive lesions (more than five) compared with patients not taking psychiatric medication ($p=0.048$). Patients with a history of extragenital warts had a longer duration of lesions compared with patients with no history of extragenital warts ($p=0.06$).

We observed that DLQI scores decreased with the increase in the duration of time with lesions ($p=0.005$). Patients with multiple sexual partners had higher BDI scores than those having one sexual partner ($p=0.032$). Patients with a history of extragenital warts had higher STAI-2 scores than those having no history of extragenital warts ($p=0.015$). The increase in STAI-I and DLQI scores were similar ($p=0.043$).

DISCUSSION

Genital Human Papillomavirus (HPV)—one of the most common sexually transmitted infections globally—might negatively affect patients psychosocially (1). The disease may cause feelings of depression, anger, or shame, as well as a loss of sexual desire or transformation of sexuality into an unpleasant experience (1, 12).

Based on our results, HPV infections may affect a patient's quality of life, cause anxiety and depression, and may even cause psychosocial stress, thereby necessitating treatment. Previous reports have revealed that the disease may cause a decrease in the quality of life and lead to psychosocial or sexual problems (1, 4, 11-22). Even though the results of these studies are partially consistent with the present study, comparing these results is difficult because of the use of different evaluation tools. To the best of our knowledge, this is the first study evaluating the dermatological quality-of-life index, patient anxiety, and depression status with internationally validated tests, as well as consulting a psychiatrist to assess the patient's mental state. Therefore, our results are of merit to clinicians and can be used to improve patient care.

No significant relationship was observed between the extensiveness and duration of the lesions and a history of smoking, drug abuse, or alcohol abuse. The test scores were not affected by a history of smoking, drug, or alcohol abuse. However, no control group was available for comparison of these results.

Worsening mental health in patients with a history of genital warts could be due to the infection becoming more resistant to treatment modalities over time and limited patient understanding of the disease severity over time. Hence, the experience of each patient varies.

We noted that a history of extragenital warts protected against a decrease in mental health compared with patients with no history of extragenital warts. Probably these patients become accustomed to having extragenital warts and are not distressed when the same lesions occur in the genital region; thus, their mental health is not affected.

Our results indicated that having more than five lesions may affect mental health compared with having fewer lesions. This finding suggests that more extensive lesions may cause more anxiety, concern, and psychological stress in patients. Patients with a history of psychiatric medication use were more inclined to mental distress. This possibility could be because these patients are not as well equipped to deal with new problems as their healthy counterparts.

Patients with a history of extragenital warts were prone to having more than five lesions in the genital region. This finding could be explained by the autoinoculation of warts. Moreover, because the immune system does not tolerate this condition, more extensive lesions may occur in the genital region.

Patients with more than five lesions were observed to have a longer lesion duration. Notably, lesion prevalence increases with more resistant disease. Moreover, an increase in lesion duration increases the disease resistance.

Notably, patients with a history of psychiatric medication use had more extensive lesions than other patients. This result could be interpreted as patients with susceptibility to depression having more disease-related distress, with the intensive distress causing the disease to spread rapidly.

Furthermore, a history of extragenital warts increases lesion duration. In addition, an immune system prone to HPV infection may have difficulties clearing the infection. We showed that DLQI scores decreased as the duration of the lesions increased. This can be interpreted as the patient adjusting to the disease over time or that the patient lacks information on the disease.

Patients with a history of multiple sexual partners had higher BDI scores. This result suggests that depression can lead the patient to polygamy as an escape mechanism. In addition, it can be concluded that having multiple sexual partners can cause distress, leading to patient depression.

A history of extragenital warts results in increased STAI-2 scores. This result suggests that when the patient is familiar with the disease, the concern and anxiety of the individual increases.

Notably, only one previous study had used DLQI to evaluate the effects of genital and extragenital warts on the quality of life of patients (19). The authors observed that the overall DLQI scores of patients with extragenital warts were higher than those of patients with genital warts, and extragenital warts can negatively affect a patient's life. Nevertheless, the scores of patients in this study were lower than those in the present study, and generally, the disease was noted to have a small effect on the patient's quality of life.

Nonetheless, the fact that 14 patients (18.2%) in the present study required psychiatric medication is a significant observation. However, further studies with large patient groups, including both men and women, as well as control groups, should be conducted to confirm our study results.

Conclusively, patients suffering from genital HPV for longer than 3 months are negatively affected psychosocially. Therefore, these patients should be approached with kindness, compassion, and patience to achieve treatment success. In addition, an expert psychiatrist's support can be pursued if necessary.

Ethics Committee Approval: Ethics committee approval was received for this study from the ethics committee of Gülhane Military Medical Academy. (50687469-I49I-2338-I3/I648-2499 – I2.II.2013).

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

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