International Journal of Research in Medical Sciences
Jain SK et al. Int J Res Med Sci. 2016 Aug;4(8):3235-3239
www.msjonline.org
pISSN 2320-6071 | eISSN 2320-6012

DOI: http://dx.doi.org/10.18203/2320-6012.ijrms20162271

Research Article

An evaluation of quality of life of skin cancer patients after surgery using dermatology life quality index tool

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Received: 20 March 2016
Accepted: 27 April 2016

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ABSTRACT

Background: Quality of life (QOL) has been identified as an important outcome in cancer researches yet the most common malignancy among humans, non-melanoma skin cancer (NMSC), but poorly studied. Aim of the study was to analyze the quality of life of non-melanoma skin cancer patients after surgery using dermatology life quality index inventory (DLQI).
Methods: Retrospective cohort of patients operated for non-melanoma skin cancer in last 2 years and paid postoperative 4-month visit formed the study population. Inclusion criteria consisted of subjects operated for non-melanoma skin cancer and paid follow up visits having sufficient physical and mental capacity. Fifty-six subjects fulfilled the selection criteria laid down thus included in this study. Study tools were records of patients, which were obtained from medical records section. If any more information was required, study subjects were contacted.
Results: Out of total 56 study subjects, Basal cell carcinomas were found in 91.1% (n=51); squamous cell carcinomas were detected in 7.2% (n=4). Single location wise more lesions were located on the nose 22.1% (n=15) and forehead 17.6% (12). For most patients (75%), the lesion had not been previously treated. 58.9% subjects did not have any other associated co-morbid condition. Lower mean values were observed post-operative i.e. lower DLQI scores were recorded 4 months after surgery in our study which indicates that adverse effects were not very prominent thus preserving quality of life post operatively. Paired sample t-tests revealed a significant effect on DLQI item 1 (p=0.008), item 2 (p=0.043), and item 4 (p=0.003), with scores decreasing (improving QOL) after treatment. The change in total DLQI score demonstrated a trend toward significance, with overall QOL improving after treatment (p=0.024).
Conclusions: Previously commonly employed dermatological Quality of life tools demonstrated minimal handicap at initial diagnosis and little change after treatment of nonmelanoma skin cancer. Development of disease-specific instrument is warranted to explore the disease process.

Keywords: Evaluation, Quality of life, Skin cancer, Patients, Surgery

INTRODUCTION

Incidence of skin cancers has been increasing since the last few decades worldwide. Non melanoma skin cancer (NMSC) is the commonest variety of cutaneous malignancy. Though national surveys and cross-country data in India are unavailable, there are indirect indications from several smaller reports that NMSCs may be on the rise in India.[1,2] Non-melanoma skin cancer infrequently poses a mortality risk, it never the less has the capacity to exert a detrimental effect on an individual's quality of life (QOL).[3] The impact on QOL comes from the tumour itself, from the intervention and from the sequel after the treatment.

Health-related quality of life has been defined as the 'perception of the effects of illness and treatment on the physical, psychological, and social aspects of life and it is becoming increasingly recognised as an important therapeutic outcome in dermatology.[4-6] QOL has been identified as an important outcome in cancer research. In particular, cancer has been associated with a variety of negative psychologic sequel such as depression, anxiety, and vulnerability.[7,8] Although NMSC is usually not life threatening, the disease may impact importantly on self and body image because of involvement of the largest body organ and the one most visually conspicuous to self and others.

Quality of life has been identified as an important outcome in cancer research, yet the most common malignancy among humans, non-melanoma skin cancer, has been poorly studied in this regard. Only a very few studies have been conducted on this topic and none from the state of Uttar Pradesh. Paucity of literature also warrants this study. Therefore the present study was planned to ascertain and analyze the quality of life of non-melanoma skin cancer patients after surgery using dermatology life quality index inventory.

METHODS

The present study was planned and executed by the Department of Dermatology in collaboration with Department of Pathology, F. H. Medical College, Tundla, Uttar Pradesh. Retrospective cohort of patients operated for non-melanoma skin cancer in last 2 years and paid postoperative 4-month visit formed the study population. For the purpose of this study, high-risk non-melanoma skin cancer was defined by any of the following criteria: tumors with a diameter of >2 cm, tumors of long standing duration, tumors with a diffuse histologic growth pattern, recurrent tumors, tumors arising within the H-zone or in patients with hereditary syndromes or significant immune-suppression, or tumors with evidence of perineural spread.

Inclusion criteria consisted of subjects operated for non-melanoma skin cancer and paid follow up visits having sufficient physical and mental capacity. Exclusion criteria were pregnant women, widow and menopausal women, women who stopped using FP because their husbands were working abroad and women who have undergone hysterectomy. Patients diagnosed with psychiatric illnesses, other disabling chronic medical illnesses viz. rheumatoid arthritis, stroke, renal failure, or cognitive impairment were also excluded from this study. Fifty-six subjects fulfilled the selection criteria laid down thus included in this study. Study tools were records of patients, which were obtained from Medical Records Section. If any more information was required, study subjects were contacted.

The DLQI inventory is a previously validated health-related Quality of Life tool that has been utilized to study a variety of dermatologic disorders.[9-11] It has also been used to study health-related Quality of Life of patients affected with basal cell carcinoma. The instrument consists of 10 items measuring QOL from the perspective of dermatologic problems within the last week. Responses are scored on a scale of 0 (not at all) to 3 (very much), with higher scores reflecting greater perceived impairment.

A proforma was designed to capture relevant details. Data was captured regarding socio-demographic profile and clinical information. Socio-demographic variables included age, gender, marital status, education level, status, employment and income etc. Clinical information was gathered on location of cancer, H-zone involvement, functional area involvement, size, recurrence, and concurrent comorbid conditions.

The study adhered to the tenets of the declaration of Helsinki for research in humans. Informed consent was obtained from patients after discussion of the advantages and risks. Permission of Institutional ethics committee (IEC) was sought before the commencement of the study.

All the questionnaires were manually checked and edited for completeness and consistency and were then coded for computer entry. After compilation of collected data, analysis was done using Statistical Package for Social Sciences (SPSS), version 20 (IBM, Chicago, USA). Paired sample t-test was employed to test pre and post surgery scores. The results were expressed using appropriate statistical methods like proportion, percentages, mean, median, standard deviation etc.

RESULTS

Out of total 56 study subjects, Basal cell carcinomas were found in 91.1% (n=51); squamous cell carcinomas were detected in 7.2% (n=4). Single location wise more lesions were located on the nose 22.1% (n=15) and forehead 17.6% (12). For most patients (75%), the lesion had not been previously treated. 58.9% subjects did not have any other associated co-morbid condition (Table 1).

Lower mean values were observed post-operative i.e. lower DLQI scores were recorded 4 months after surgery in our study which indicates that adverse effects were not very prominent thus preserving quality of life post operatively.

Table 1: Baseline characteristics of study subjects.

Variables		N	Percentage
Age Mean age = 60.24±14.9 years, Median age =61 year			
Sex	Male	22	39.3
	Female	34	60.7
Marital status	Unmarried	3	5.4
	Married	53	94.6
Histology of lesion	Basal	51	91.1
	Squamous	4	7.2
	Other	1	1.7
***Location of lesion**	Nose	15	22.1
	Lips	11	16.2
	Forehead	12	17.6
	Temple	6	8.8
	Others	18	26.4
	H-zone location	48	70.6
	Functional area involvement	19	27.9
Previous treatment	None	42	75
	Same site/Recurrent	11	19.6
	Other site	3	5.4
Co-morbid conditions	None	33	58.9
	One or more	23	41.1
*A few patients had more than one lesion; the percentage was computed using 68 as denominator.			

Table 2: Pre and post-surgery DLQI scores among study subjects.

DLQI item number	Pre surgery Mean±SD	Post 4 months Mean±SD	p value*
1	0.64±0.6	0.43±0.7	0.008
2	0.52± 0.5	0.38±0.6	0.043
3	0.15±0.4	0.14±0.5	0.581
4	0.33±0.8	0.12±0.3	0.003
5	0.25±0.5	0.12±0.3	0.362
6	0.16±0.4	0.15±0.4	0.755
7	0.08±0.3	0.09±0.3	0.962
8	0.11±0.3	0.08±0.3	0.610
9	0.04±0.2	0.11±0.4	0.683
10	0.14±0.4	0.11±0.3	0.845
Total	2.24±2.8	1.73±3.0	0.024
*Paired sample t-test, Significant p<0.05, Highly significant p<0.001			

Comparison of pre and post-surgery DLQI scores revealed that there were no significant changes in the items scores over time with the exception of items 1 and 4. Paired sample t-tests revealed a significant effect on DLQI item 1 (p=0.008), item 2 (p=0.043), and item 4 (p=0.003), with scores decreasing (improving QOL) after treatment.

The change in total DLQI score demonstrated a trend toward significance, with overall QOL improving after treatment (p=0.024) (Table 2).

Table 3: Comparison of DLQI scores with other studies.

DLQI total score	Current study	Blackford et al[10]	Rhee et al[17]
Place of study	India	UK	Wisconsin (USA)
Mean±SD			
Baseline	2.24±2.8	5.30±4.1	2.40±2.7
	N= 56	N= 44	N= 121
Four months after treatment	1.73±3.0	1.30±2.1	1.70±2.9
	N= 48	N= 37	N= 101

DISCUSSION

The current study investigated quality of life of non-melanoma skin cancer patients after surgery using Dermatology Life Quality Index inventory. Most NMSC are treated with surgery, disrupting the normal activities of daily living, and have a financial impact, and repeated treatments may be needed in the setting of incomplete surgical margins or recurrence. Following treatment, there are cosmetic and functional sequelae from scarring that can affect psychosocial function and patients often develop further NMSC, com- pounding the insult.[12] Over the past 20 years several studies have attempted to capture the impact of NMSC on an individual's QOL, identifying physical deformity, cosmesis and psychosocial function as important domains affected.[13,14] QOL questionnaires have been used as an evaluation tool to quantify a particular health problem as well as utility weightings that quantify a preference for a particular health outcome.[15]

Depending on various patient-related factors, the potential morbidity after treatment of NMSC is widely variable. Other potential negative effects may be related to degree of disfigurement or scarring, which may have ramifications from a psychosocial, marital, sexual, or medical personnel interaction standpoint.[16] Unlike other malignancies, the subject of skin cancer has not been well investigated in terms of patient QOL assessment.[11] Our previous study using the general QOL instruments, SF-36 and FACT-G, had demonstrated minimal impact of NMSC on patients at initial diagnosis. Fewer comorbid conditions and increased use of sun-protective behaviors were associated with enhanced QOL.[17]

It was revealed in the current study that basal cell

carcinomas were found in 91.1% (n=51); squamous cell carcinomas were detected in 7.2% (n=4). Single location wise more lesions were located on the nose 22.1% (n=15) and forehead 17.6% (12). For most patients (75%), the lesion had not been previously treated. 58.9% subjects did not have any other associated co-morbid condition. The result of this study is in agreement with previous study by Rhee.[18]

In our study, comparison of pre and post-surgery DLQI scores revealed that there were no significant changes in the items scores over time with the exception of items 1 and 4. Paired sample t-tests revealed a significant effect on DLQI item 1 (p=0.008), item 2 (p=0.043), and item 4 (p=0.003), with scores decreasing (improving QOL) after treatment.

Table 3 compares DLQI total scores of current study with other studies from UK and Wisconsin (USA). The baseline scores are higher in the United Kingdom study, indicating greater impairment, but the post-treatment scores are nearly identical.

UK study showed the only existing prospective QOL study on NMSC patients. In their study using the DLQI, 44 patients with BCC were prospectively evaluated, using the DLQI at baseline and 3 months after treatment.[10] In the current study, the scores demonstrated little handicap associated with the disease at baseline or after treatment. Additionally, no significant change in the DLQI scores after treatment was demonstrated. They concluded that basal cell cancers cause minimal handicap. The shortcomings of the British study, however, included a small sample size and overlooking the possibility that the instrument itself may be too nonspecific.

This study has several strengths. First, to our knowledge, non-melanoma skin cancer has not been studied with regard to Quality of life of these patients in the state of Uttar Pradesh. Quality of life has been identified as an important outcome in cancer researches yet the most common malignancy among humans, nonmelanoma skin cancer, but poorly studied. Second, due attention was paid to ensure the standardization of data collection. The study has some limitations as well. First, our cohort consisted entirely of Indian subjects; further studies are warranted with inclusion of other ethnic groups. Second, cultural influences on aesthetics may impact patient's perception of the illness and treatment. This aspect was ignored in this survey. On the other hand, no attempt was made to select patients with more advanced disease or difficult clinical situations. Future multicentre studies with bigger sample size are warranted.

CONCLUSION

On the findings of this study it can be concluded that previously commonly employed dermatological Quality of life tools demonstrated minimal handicap at initial diagnosis and little change after treatment of nonmelanoma skin cancer. Although the associations were modest, improvement in some aspects of well-being after treatment of nonmelanoma skin cancer was demonstrated. Development of disease-specific instrument is warranted to explore the disease process.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

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Cite this article as: Jain SK, Jain P, Singh A, Goel S, Goyal P, Tank R. An evaluation of quality of life of skin cancer patients after surgery using dermatology life quality index tool. Int J Res Med Sci 2016;4:3235-9.