

## QUALITY OF LIFE IN ACNE PATIENTS USING ISOTRETINOIN AT CAN THO HOSPITAL OF DERMATO- VENEREOLOGY IN 2023

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### ABSTRACT

**Background:** *Acne vulgaris is a common chronic skin disease that mainly occurs during puberty. Although acne vulgaris is not life-threatening, it has physical symptoms such as a rash, pain, and stinging. It also affects patients psychologically (such as friendship issues, workplace trouble, bad appearance, self-deprecation, shame, anger, anxiety, emotional burden, etc.), socially (dislike, feeling stigmatized, etc.), and mentally (anxiety, depression, and suicidal thoughts). All of these problems severely reduce the patient's quality of life. In Vietnam in general and at Can Tho Dermato-Venereology Hospital in particular, acne is one of the leading causes of patients coming for examination and treatment. However, few studies on the quality of life of acne patients have been done. Objectives:* To determine the rate of impact on quality of life and some related factors in patients with moderate to severe acne at Can Tho Dermato-Venereology Hospital in 2021-2023. **Materials and methods:** A cross-sectional descriptive study analyzed 92 patients with acne at Can Tho Dermato-Venereology Hospital. **Results:** In our study, 43.5% of patients were female, 53.7% were male; and the majority of patients (55.4%) were aged 19 years old and over, compared to 44.6% aged under 19. The disease duration under 1 year was 33.7% and from 1 year or more 66.3%. Severe and very severe acne accounted for 73.9%, and moderate acne was 26.1%. For acne-induced QoL impairment by CADI score, there was no impairment (CADI=0) in 4 (4,3%), mild impairment (CADI=1-5) in 12 (13%), moderate impairment (CADI=6-10) in 48 (52,2%) and severe impairment (CADI=11-15) in 28 (30,4%). The severity of impairment was associated with acne grade ( $p=0,038$ ). In view of acne grade, the level of QoF impairment among severe and very severe acne (97,1%) outgrew it in moderate acne (83,3%). The severity of impairment was associated with occupation ( $p=0,033$ ) and the duration of acne ( $p=0,016$ ). **Conclusions:** There was no impairment in 4 (4,3%), mild impairment in 12 (13%), moderate impairment in 48 (52,2%) and severe impairment in 28 (30,4%). The severity of impairment was associated with occupation ( $p=0,033$ ), duration of acne ( $p=0,016$ ), and acne grade ( $p=0,038$ ).

**Keywords:** *acne, quality of life, isotretinoin.*

### I. INTRODUCTION

Acne vulgaris is a common chronic skin disease that mainly occurs during puberty. Acne not only affects the appearance of the skin but also affects the patient's mental health [1], [2]. Symptoms of the disease such as pus, papules, pustules, inflammatory acne, and acne cause discomfort, stinging, and even pain [3],[4]. It also affects patients psychologically (such as friendship issues, workplace trouble, bad appearance, self-deprecation, shame, anger, anxiety, emotional burden, etc.), socially (dislike, feeling stigmatized, etc.) [5], [6], and mentally (anxiety, depression and suicidal thoughts) [7], [8]. All of these problems severely reduce the patient's quality of life [9]. In Vietnam in general and at Can Tho Hospital of Dermato-Venereology in particular, acne is one of the leading causes of patients coming for examination and treatment. However, few studies on the

quality of life of acne patients have been done, so we conducted a study on “**Quality of life in acne patients using isotretinoin at Can Tho Hospital of Dermato- Venereology in 2023**” with the aim: *To determine the rate of impact on quality of life and some related factors of patients with moderate to severe acne at Can Tho Hospital of Dermato-Venereology in 2021-2023.*

## II. MATERIALS AND METHODS

### 2.1. Study population and setting

The participants included all acne patients treated at Can Tho Dermato-Venereology Hospital from 2021 to 2023. The study sample was selected as patients aged 12 years and over who were diagnosed with moderate to very severe acne according to the GAGS scale at Can Tho Dermato-Venereology Hospital and were assigned to use isotretinoin based on the following criteria: criteria for diagnosis of acne - skin lesions and criteria for assessing severity [10]. With acne patients, the spectrum of acne lesions ranged from noninflammatory open or closed comedones (blackheads and whiteheads) to inflammatory lesions, which might be papules, pustules, or nodules. Lesions were most likely to occur on the face, neck, chest, and back, where there was a higher concentration of sebaceous glands. The severity of acne was assessed based on GAGS 1997. Standards for elimination included patients who were pregnant or lactating; patients with other skin diseases or mental diseases; patients with diabetes, kidney failure, liver failure, dyslipidemia, obesity, alcoholism, smoking, and some other medical diseases; patients with contraindications to isotretinoin; and those who did not consent to participate in the study. The study sampling method was convenience sampling. The sample size was calculated with the following equation:  $n = \frac{z^2_{1-\frac{\alpha}{2}} p(1-p)}{d^2}$ . In which n is the smallest sample size,  $z = 95\%$ ,  $z^2_{1-\frac{\alpha}{2}} = 1.96$ , and p is the response rate after 16 weeks of isotretinoin treatment. Take  $p = 0.94$  (according to the research of author Nguyen Van Thuong [11]), thus  $n = 86$ . In fact, we studied 92 patients. Our data collection methods were history taking and clinical examination. The disability caused by acne was assessed by the Cardiff Acne Disability Index (CADI). The total score for all five questions ranged from 0–15 (each question scores 0-3). They were categorized as no impairment from acne (CADI 0), mild impairment (CADI 1–5), moderate impairment (CADI 6–10), and severe impairment (CADI 11–15) [9].

**2.2. Study design:** A cross-sectional study was employed to obtain the research aims.

**2.3. Study contents:** We researched the rate of impact on quality of life and some related factors in patients with moderate to severe acne.

**2.4. Statistical analysis:** The collected data were analyzed with SPSS 20.0.

### 2.5. Ethics Approval

The study was conducted after approval by the Scientific Research Council of Can Tho University of Medicine and Pharmacy, Can Tho Dermato-Venereology Hospital, and Can Tho University of Medicine and Pharmacy Hospital.

Research participants were informed, explained, and agreed to voluntarily participate in the study. All personal information and illnesses of the participants were encrypted to ensure the privacy of the patients.

Reseachers ensured fairness and objectivity during data collection and processing.

### III. RESULTS

Table 1. General characteristics of the study patients (n=92)

General characteristics of the study patients	n	%
Age		
>=19	48	52,2
<19	44	47.8
Gender		
Female	38	43.3
Male	54	58.7
Occupation		
Intellectual workers	69	75
Manual workers	23	25
Ethnicity		
Kinh	68	73.9
Other	24	26.1
Duration of acne		
<1 year	31	33.7
>= 1 years	61	66.3
Total	92	100

Patients aged 19 years and over accounted for 52.2%. Males were dominated with 43.3%. Patients were mainly in the group of intellectual workers (75%). The Kinh accounted for 73.9%. Most patients had had acne for more than 1 year (66.3%).

Table 2. Aspects of quality of life affected on acne patients

Questions	Score		n (%)
Have u felt aggressive, frustrated, or embarrassed on account of your acne? 1. The patient felt aggressive, frustrated, or embarrassed on account of acne	Always	3	23 (25)
	Mostly	2	51 (55.4)
	Occasionally	1	11 (12)
	Never	0	7 (7.6)
2. Social life and male-female relationships were interfered	Severely	3	27 (29.3)
	Moderately	2	35 (38)
	Occasionally	1	21 (22.8)
	Not interfered	0	9 (9.8)
3. The patient avoided wearing swimming costumes or clothes that might expose areas of acne	Always	3	19 (20.7)
	Mostly	2	37 (40.2)
	Occasionally	1	29 (31.5)
	Never	0	7 (7.6)
4. Patient concerned the appearance of acne on the skin	Very depressed	3	12 (13)
	Usually concerned	2	47 (51.1)
	Occasionally	1	25 (27.2)
	Never concerned	0	8 (8.7)
5. Patient had current problems caused by acne	Serious problem	3	14 (15.2)
	Major problem	2	41 (44.6)
	Minor problem	1	28 (30.4)
	No problem	0	9 (9.8)

Most of the patients felt aggressive, frustrated, or embarrassed on account of their acne (55.4%). Patients reported that acne had interfered with their social life and male-

female relationships to a great extent (38%). Most of the patients avoided wearing swimming costumes or clothes that might expose areas of their trunk to acne (40.2%). The majority of patients were often concerned with the appearance of acne (51.1%). Acne was reported to be a major problem for most participants (44.6%).

Table 3. CARDIFF ACNE DISABILITY INDEX (CADI) for QoL in acne (n=92)

CADI SCORE LEVEL OF IMPAIRMENT	n	%
No impairment	6	6.5
Mild impairment	10	10.9
Moderate impairment	47	51.1
Severe impairment	29	31.5
Total	92	100

For acne-induced QoL impairment by CADI score, there was no impairment (CADI=0) in 4 (4,3%), mild impairment (CADI=1-5) in 12 (13%), moderate impairment (CADI=6-10) in 48 (52,2%) and severe impairment (CADI=11-15) in 28 (30,4%).

Table 4. CADI score-based levels of QoL impairment and associated risk factors (n=92)

Risk factors		Level of impairment (CADI score)		p
		Yes	No	
Age	>=19 years	46(95.8)	2(4.2)	p=0.4
	<19 years	40(90.9)	4(9.1)	
Gender	Female	35(92.1)	3 (7.9)	p=0.688
	Male	51(94.4)	3(5.6)	
Ethnicity	Kinh	65(95.6)	3(4.4)	p=0.18
	Other	21(87.5)	3(12.5)	
Occupation	Intellectual workers	67(97.1)	2(2.9)	p=0.033
	Manual workers	19(82.6)	4(17.4)	
Duration of acne	< 1 year	26(83.9)	5(16.1)	p=0.016
	>= 1 years	60(98.4)	1(1.6)	

The severity of impairment was associated with occupation (p=0.033) and duration of acne (p=0.016).

Table 5. CADI score-based levels of QoL impairment and associated severe acne (GAGS) (n=92)

Risk factor		Level of impairment (CADI score)		p
		Yes	No	
Severe Acne (GAGS)	Moderate	20(83.3)	4(16.7)	p=0.038
	Severe and very severe	66(97.1)	2(2.9)	

The severity of impairment was associated with acne grade (p=0.038). In view of acne grade, the level of QoF impairment among severe and very severe acne (97,1%) outgrew it in moderate acne (83,3%).

#### IV. DISCUSSION

General characteristics of the study patients: patients aged 19 years and over accounted for 55.4% and male-dominated 56.5% in our study. Patients were mainly in the group of intellectual workers (75%). The rate of Kinh ethnicity accounted for 73.9%. Most

patients had had acne for more than 1 year (66.3%). The results of our study were similar to those of the authors Le Ngoc Diep and Nguyen Thi Hong Nhung [12], the age of over 19 dominated (20-24 years old accounted for 47.6%), intellectual labor accounted for the majority 75%. In our study, men outnumbered women, which was contrary to the study of authors Le Ngoc Diep and Nguyen Thi Hong Nhung, there were more women. This contradiction was possibly due to differences in the characteristics of research subjects.

According to the research outcomes of author Nadia Shams et al. [9], the patients felt aggressive, frustrated, or embarrassed on account of their acne at a low level (55.4%). Patients reported that acne had interfered with their social life and male-female relationships to a great extent (70%). Most of the patients avoided wearing swimming costumes or clothes that might expose areas of their trunk to acne (55.6%). The majority of patients were often concerned with the appearance of acne (30.7%). Acne was reported to be a major problem for most participants (37%). From that, it could be seen that our research was mostly similar to the research of Nadia Shams.

CARDIFF ACNE DISABILITY INDEX (CADI) for acne-related QoL: In our study, for acne-induced QoL impairment by CADI score, there was no impairment (CADI=0) in 4 (4.3%), mild impairment (CADI=1-5) in 12 (13%), moderate impairment (CADI=6-10) in 48 (52.2%) and severe impairment (CADI=11-15) in 28 (30.4%). Based on the research results of Nadia Shams et al. [9], the influence was mainly moderate impairment (61%), mild impairment (19.5%), severe impairment (12%), and no impairment (7.3%). Thus, the results of our study were different from those of Nadia Shams, it was possible that the subject we chose to study was a moderate acne patient or higher, so it had a greater impact on quality of life.

CADI score-based levels of QoL impairment and associated risk factors: In our study, patients with mental labor had a greater impact on quality of life (97.1%) than manual labor patients (82.6%). Acne patients with a disease duration of more than 1 year had a higher rate of affecting quality of life (93.5%) than duration of less than 1 year (83.9%). In view of acne grade, the level of QoF impairment among severe and very severe acne (97.1%) outgrew it in moderate acne (83.3%). The differences between levels of QoF impairment among severe, very severe, and moderate acne patients, were statistically significant with p-values of 0.033; 0.016; and 0.038, respectively. The results of our study were similar to those of authors Nguyen Thi Hong Nhung, and Le Ngoc Diep [12]. Mental labor affected the quality of life of patients (71.9%) more than that of manual workers (28.1%), and the difference was also statistically significant ( $p=0.017$ ). The results of author Nadia Shams et al. [9] also reported that higher grades of acne were associated with higher QoL impairment. Among those with mild acne, almost half of the cases had moderate impairment. The figure rose to 60% (moderate impairment) in moderate acne cases and 100% in severe acne cases. Therefore, our results were similar to Nadia Shams.

## V. CONCLUSION

There was no impairment in 4 (4.3%), mild impairment in 12 (13%), moderate impairment in 48 (52.2%) and severe impairment in 28 (30.4%). The severity of impairment was associated with occupation ( $p=0.033$ ), duration of acne ( $p=0.016$ ), and acne grade ( $p=0.038$ ).

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