

## Original Article

## ACNE VULGARIS – ADEQUATE AND TIMELY THERAPY AS AN EARLY PREVENTION OF PSYCHOSOCIAL DISTURBANCES

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**Abstract.** *Acne is a polyetiological chronic disease of pilosebaceous units that affects 80% to 90% of teenagers and adolescents. It is manifested as mild, moderate, or severe form. Since adolescence is time of psychological, emotional and social personality development, the appearance of acne, most frequently on face, demands long-term treatment, significantly affects psychologic and emotional state, creating the feeling of being marked and leading to depression, anxiety, social isolation and negative effect on the quality of life. Timely education, with general information on the causes, duration of the disease and adequate treatment can significantly affect patients' relation to the disease and reduction of psycho-social problems. The analysis included 220, 39 (55%) males and 60 (45%) females, 14 to 30 years of age (or more), most frequently 16 to 20 years old with moderate form of the disease. Therapy was applied according to valid protocols. Each patient was given full attention with the explanation of the nature and course of the disease. The largest number of patients had the expected results, which was mutually appreciated. It was concluded that individual approach and cooperation during the treatment of each patient were necessary.*

**Key words:** *Acne vulgaris, therapy, psychosocial disturbances, quality of life.*

### Introduction

Acne is a polyetiological chronic disease of pilosebaceous units. The etiopathogenesis involves the following: 1. elevated sebum production stimulated by the effects of androgynous hormone, 2. elevated follicular proliferation and keratinocyte differentiation, 3. colonization of *Propionibacterium acnes*, 4. inflammation induction. Acnes are manifested as: mild form (A. comedonica), moderate (A. papulosis and A. nodules-small nodule), and as a severe form (nodulo-cystica and A. conglobata). The presence of acne (most frequently on face, chest and back) demands long-term treatment. It has been estimated that 80–90% of teenagers and adolescents suffer from acne, although they can be present during adulthood as well [1, 2]. Adolescence is the period of psychic, emotional and social personality development [3, 4]. Acnes strongly affect [5, 6] psychological and emotional wellbeing, creating the self-image and the feeling of being marked, which leads to frustration, anger, depression, anxiety, social isolation, life-long problems with confidence and self-respect, with higher unemployment rate, limited choice of work place, inability of promotion, inappropriate comments. As a result, negative effect on the quality of life of the patient is registered.

### The Aim

The aim is the analysis of patients treated for acne (gender, age, disease type, applied therapy, treatment success).

### Materials and Methods

The analysis included 220 outpatients. Therapy was applied according to the valid protocol: topical retinoids (keratinocyte proliferation, inflammation), oral retinoids (sebum production, keratinocyte proliferation, *Propionibacterium acnes* colonization, inflammation), azelaic acid (keratinocyte proliferation, *P. acnes* colonization and inflammation), topical and oral antibiotics (P acnes colonization and inflammation), benzoyl peroxide (sebum production, keratinocyte proliferation, *P. acnes* colonization), hormones (sebum production) and alpha HA and beta HA (keratinocyte proliferation). Each patient was given a detailed explanation of the nature of their disease, its mechanism of appearance, duration, therapeutic possibilities, results and their personal contribution to the successful treatment.

### Results

Results are present in tables.

Table 1 presents the structure of treated patients according to gender. Out of 220 treated patients, 87 were male (39.55%) and 133 (60.45%) were female.

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**Table 1** Gender structure

Gender	Male	Female	Total
Number	87	133	220
Percentage	39.55	60.45	100.00

**Table 2** Age structure

Age	Up to 15	16–20	21–25	26–30	Over 30	Total
Number	30	109	55	17	9	220
Percentage	13.64	49.54	25.00	7.73	4.09	100.00

**Table 3** Type of the disease

Form	Mild	Moderate	Serious		Total	
Type	Type I A. comedonica	Type II A. papulopustulosa	Type III A. nodularis	Type IV A. nodulocystica	Type IV A. conglobata	
Number	33	91	61	24	11	220
Percent.	15.00	41.36	27.73	10.91	5.00	100.00
Total/%	15.00	69.09		15.91		100.00

**Table 4** Gender structure of the isotretinoin treated patients

Gender	Male	Female	Total
Number	13	3	16
Percentage	81.25	18.75	100.00

**Table 5** Age structure of the isotretinoin treated patients

Age	Up to 15	16–20	21–25	Total
Number	3	9	4	16
Percentage	18.75	56.25	25.00	100.00

**Table 6** Type of acnes in isotretinoin treated patients

Form	Moderate	Serious		Total
Type	Type II A. papulopustulosa	Type IV A. nodulocystica	Type IV A. conglobata	
Number	1	7	8	16
Percentage	6.25	43.75	50.00	100.00
Total/%	6.25	93.75		100.00

Table 2 presents the age structure of the treated patients. The majority of the treated patients was in the age group of 16–20 years (109 – 49.54%), then 21–25 years (55 – 25.00%) and to 15 years (30 – 13.64%), with reduced numbers for 26–30 years (17 – 7.73%) and over 30 (9 – 4.09%).

Table 3 presents the disease structure according to types depending on intensity. Most frequently it was Moderate, type II – Acne papulopustulosa (91 – 41.36%) and type III – Acne nodularis (61 – 27.73%), total 152 – 69.09%. Mild form (type I – Acne comedonica) was present in 33 – 15.00% of the treated patients. Serious forms: Acne nodulocystica (type IV) had 24 – 10.91% of the treated, and Acne conglobata (Type IV) 11 – 5.00%, total of 35 – 15.91% of the treated patients.

Table 4 shows the structure according to gender of those treated with isotretinoin. Out of 16 treated 13 patients (81.25%) were male and 3 (18.75%) were female.

Table 5 shows the age structure of the patients treated with isotretinoin. The majority, 9 patients (56.25%) was in the category of 16 – 20 years, then 4 – 24% from 21 – 25 years and 3 – 18,75% up to 15 years.

Table 6 presents the disease structure according to types depending on intensity. Moderate form – Type II, Acne papulopustulosa was found in 1 patient (6.25%). Serious forms – Type IV, Acne nodulocystica were found in 7 patients (43.75%) and Acne conglobata was present in 8 patients (50.00%), total 15 (93,75%) patients.

Great majority of patients had the expected results (figures) which was mutually appreciated. Figures: 1A, 2A,

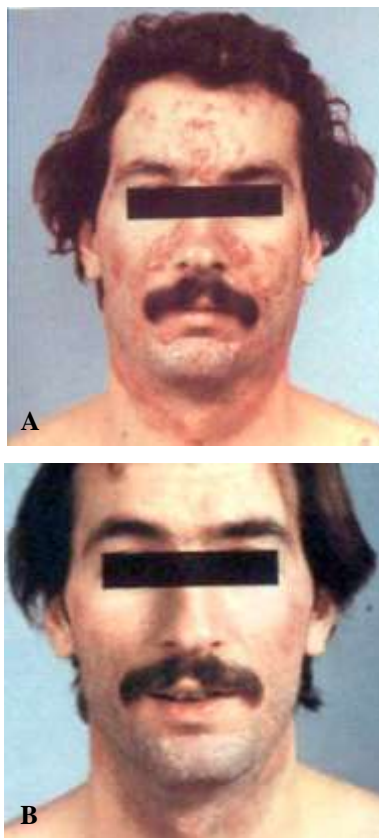
3A (at the beginning of treatment); 1B (After one month), 2B (After 2 months), 3B (4 months after the treatment with isotretinoin).



**Fig. 1** A – At the beginning of the treatment, B – after one month



**Fig. 2** A – At the beginning of the treatment, B – After 2 months



**Fig. 3** A – Before the treatment, B – 4 months after the treatment with isotretinoin

## Discussion

The treatment was conducted with 220 patients aged between 15 to 35. The largest number of patients was in the category of 16 to 20 years of age (49.54%). There were more female patients (f:m = 60, 45%:39, 55%). The greatest number had a moderate form (69.9%). All the patients had full attention during the treatment and there was also an attempt to affect their behavior and acceptance of the reality with the aim of overcoming the present discomfort.

“There is no other disease which provokes so much psychological trauma, and lack of possibility to improve the relationship between parents and children, so much insecurity and inferiority feeling and so much psychological suffering as acne vulgaris” [7]. Social and economic effects of acne are usually related to a high prevalence of this pathology, which can be marked as a public health problem [8]. More than 2000 studies on the relationship between acne and psychological state of the patients were performed [9]. Emotional problems as well as behavioral ones are determined as double in those affected with acne [10]. Significantly elevated stress level in relationships with other people and in everyday life is evident [11]. People affected with acne have lower level of self-confidence and higher level of depression and anxiety [9]. Higher level of dissatisfaction is registered in persons with facial acne [12]. Clinically significant anxiety was registered in 44% of the affected, while clinically significant depression was registered in 18% [13]. Age, sex and seriousness of acne are closely related to depression [14]. The prevalence of acne grows with age, in girls when they get period. In moderate acne, the higher level of psychic symptoms is more frequent in later periods of puberty [15]. The prevalence of anxiety in the affected is 68.3%. Anxiety and depression rates were not related to the age, sex, marital status and the acne SCOR [16]. Suicidal ideas are not rare in dermatology patients and they can occur in patients with mild skin lesions, as well [17].

The highest prevalence of suicidal ideas is found in psoriasis patients (7.2%), acne (5.6%), atopic dermatitis (2.1%), and in none with alopecia areata [18].

The prevalence of suicidal ideas in the patients with acne is 8% [19] and 7% [17]. Some patients became suicidal even after successful dearmabrasion [20]. The suspicion that isotretinoin used for acne treatment, could provoke depression and suicidal ideas, is not supported by scientific evidence. Acnes are the primary cause of depression and efficient treatment can improve the depression symptoms and reduce the frequency of suicidal ideas [21]. The lack of serious acne treatment with isotretinoin is accompanied with a higher risk for suicide [22]. Stress is a leading factor in the appearance of a large number of chronic non-infectious diseases [23]. It seems that stress causes acne and that acnes cause stress. There is a vicious stress-acne circle [24]. The correlation between the perceived stress and the seriousness of clinical picture of papulopustular acne is

proven. The combination of treatment for acne and controlling stress affects both causes and helps the diseased. Anxiety prevention in adolescence means prevention of many mental disorders later in life [25]. Not only that it is evident that acnes are a visual condition which can provoke various psychosocial effects, but also that mental health problems provoke acne or make them worse [26]. However, the impact of acne on psychological implications of their treatment has not been fully understood, they are often considered to be a cosmetic temporary problem [12]. Considering acne as a cosmetic problem and neglecting psychosocial aspect can be dangerous [27, 28]. It is important to concentrate on the subjective perception of acne treatment without regard to the objective seriousness [11]. The reduction of psychological effects of acne is considered to be one of the leading principles for their clinical treatment [29].

Timely education with general information on the causes and duration of the disease and early intervention accompanied with adequate treatment, probably psychotherapy and anti-anxiety drugs, can significantly affect patients' attitude towards the disease as well as avoidance and reduction of the psychosocial problems. The quality of life of the patients with acne is on the same level as that in patients with other chronic conditions (asthma, diabetes, epilepsy, arthritis) [30]. Acnes are accompanied with the disturbed quality of life of the affected [31]. Acnes negatively affect the quality of life [32]. In most students the quality of life is moderately harmed [33]. Only 17% of boys and 18% of girls perceive their problems with acne as huge. 15% of students felt depressed and miserable due to their acne [34]. Moderate disturbance of the quality of life was found regardless of sex, while it was worse in the case of a

prolonged disease [35]. The effect of acnes on the quality of life of adolescents is more pronounced in serious clinical forms of acnes, more obvious in women [36]. The disease provokes higher psychosocial disturbance in women [37]. The quality of life depends on the degree of the disease as well as on its duration, although in people affected with mild forms of the disease and shorter duration the effect on the quality of life is also registered [38]. It is believed that there is a linear relationship between the clinical seriousness of acne and the quality of life [39]. However, the condition depends on the capability of a person to cope and sometimes persons with mild acnes can have serious subjective symptoms, which affects their quality of life [40]. Acnes can greatly affect patients' lives, regardless of how serious they are [27].

Efficient treatment of acne in combination with appropriate mental health support offers great opportunity for the improvement of the quality of life of people with acne [30].

## Conclusion

Individual approach is necessary in the treatment of each patient, with the awareness of etiopathogenesis of the disease and wide array of drugs, with necessary psychotherapy accompanied with the information about the nature and the duration of the disease and the possibility of gaining good results, following necessary cooperation and discipline.

*Note:* This paper was presented at The First Regional Congress on The Health of the Young, Belgrade 2016.

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