ACNE IN BULGARIA AND GREECE: COMPARISON STUDY OF PATIENT ADHERENCE

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Abstract: Acne vulgaris is a chronic inflammatory disorder of the skin. Low level of adherence to acne patients to treatment can lead to poor clinical efficacy, increased healthcare costs, and unnecessary treatments that can lead to adverse drug reactions. The aim of this study is to compare the level of adherence to acne patients between Greece and Bulgaria. A multicenter observational study utilized self-completed questionnaires to assess medication adherence among patients visiting 45 pharmacies throughout Bulgaria and Greece between May and December 2018. A total of 225 patients were included in the study. Subjects included acne patients undergoing treatment who had a medical consultation prior to the study. All patients had acne therapy prescriptions. The likelihood of adherence was assessed using the Elaboration d'un outil d'évaluation de l'observance (ECOB) Adherence Questionnaire. Adherence Questionnaire. The ECOB scale was translated into Bulgarian and standardized by forwarding translation, backward translation, and a pretest. The data collected were proceeded through SPSS ver. 22.0. According to the ECOB scores, good adherence to treatment was documented in 42.0% of the Bulgarian patients on topical treatment and 39 on oral medication. For the Greek patients, good adherence to topical medication was judged to be good for 53% and 40% in oral treatment. Greek and Bulgarian patients show a similar level of adherence to acne treatment – a high rate of non-adherence. Perhaps patients could be monitored about their adherence and this can be performed in the dermatology clinic or the pharmacy.

Keywords: acne, adherence, Greece, Bulgaria, ECOB scale

Acne vulgaris is a chronic inflammatory disorder of the skin. It is the most common dermatological disease, affecting nearly 80% of people during their lifetime. Acne is a common dermatological diagnosis accounting for 22–32% of dermatology patients and is one of the most common reasons for visiting a physician (1.1%) (1) with an estimated prevalence of 681.2 million people affected in 2016 (2, 3). A systematic analysis for the Global Burden of Disease study indicated that acne was the 8th most prevalent disease globally in 2010 (4, 5).

In 2012 acne prevalence was 51.2% for Greece affecting both sexes equally (6). There is no data about the prevalence of acne in Bulgaria but taking in mind the close connection between the countries and climate equality, it can be assumed that the level is the same.

Acne is a chronic disease owing to its prolonged course, pattern of recurrence and relapse, and manifestations such as acute outbreaks or slow

onset. It primarily affects adolescents and young adults, individuals can experience acne in their adult life (7). Although it becomes less common in adulthood, it persists in nearly half of affected people into their twenties and thirties and a smaller group continue to have difficulties in their forties (8). Acne is not life-threatening nor physically incapacitating, but it can severely affect the social and psychologic functioning of the patients. Moreover, the disease causes profound negative psychological and social effects on their quality of life (QoL) (9). The impact of acne, even of mild to moderate forms, upon the quality of life of patients is depressive (10). Females, older patients and those with more severe disease have a worse quality of life (11).

Acne affects the quality of life of young adolescents in Greece. The impact is proportional to the severity of acne. More severe acne is associated with a greater effect on the quality of life with implications for self-esteem, body image and relationships with others (6).

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Quality of life is defined by the World Health Organization (12) as the “individuals’ perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards, and concerns”. Acne is associated with problems of self-esteem/self-confidence, body image, embarrassment/social withdrawal, anger, preoccupation with acne, frustration/confusion, limitations in lifestyle, and problems in family relationships (13). Patients with acne often show anxiety, depression, and poor self-esteem (14, 15), and report a poorer overall quality of life (QOL) (16). It is proved that acne patients report greater levels of anxiety and depression than other dermatologic patients.

Treatment adherence is very important to the success of acne management and the improvement of patients’ quality of life (17, 18). In dermatology, the rate of adherence to treatment varies between 55 and 66%, being lower for topical treatments (19). Several models have shown that interventions that improve adherence to treatment increase the quality of life of patients (20). Many factors interfere with acne treatment adherence such as slow improvement of the patient, long treatment, difficulty fitting into the daily regimen treatment, costs of the acne therapy and side effects and many others.

The aim of this study is to compare the level of adherence to acne patients between Greece and Bulgaria.

EXPERIMENTAL

A multicenter observational study utilized self-completed questionnaires to assess medication adherence among patients visiting 45 pharmacies throughout Bulgaria and Greece between May and December 2018. Patients were recruited from 25 pharmacies for the cities: Sofia, Varna, Plovdiv, Bourgas and Russe from Bulgaria (five for a city) and 20 for Athens and Thessaloniki from Greece (10 for a city). A total of 225 patients were included in the study – 5 patients per pharmacy. The Ethics Committee of the Medical University of Sofia approved the study protocol. All participants provided written informed consent before entering the study, and all questionnaires were made anonymous before evaluation. Subjects included acne patients undergoing treatment who had a medical consultation prior to the study. All patients had acne therapy prescriptions.

The likelihood of adherence was assessed using the ECOB Adherence Questionnaire created and validated by Pawin et al. (21). Adherence to

treatment was evaluated at the visit in the pharmacy by means of the validated 4-item questionnaire (ECOB) for oral and topical treatment with the following classification: good adherence (ECOB score = 4) and poor adherence (ECOB < 4). Poor adherence to treatment was defined as a different to expected answer on the ECOB questionnaire. The ECOB scale was translated into Bulgarian and standardized by forwarding translation, backward translation, and a pretest.

Oral Treatment	Topical Treatment
Do you remember the name of the last drugs you took?	Do you remember the name of the last drugs you took?
Have you used these drugs?	Have you tolerated these drugs well?
Have you forgotten to take these drugs at any time during the treatment period?	Have you ever stopped taking these drugs because you thought it would do more harm than good?
Have these drugs improved your acne?	Have these drugs been useful for you?

Questionnaires were tabulated and analyzed using simple descriptive statistics. Also, the relationship between the objective variable (ECOB adherence assessment) and explanatory variables was examined by the X² test. Explanatory variables included age, age at onset of acne, experience of side effects. The level of statistical significance is 5%. Statistical analysis was performed using the statistical software SPSS ver. 21.

A secondary objective was to determine factors that are influencing acne treatment adherence.

RESULTS

A total of 225 patients were enrolled and all of them (100 %) completed the questionnaires (Table 1).

The mean age of the patients was 21.8 years for Bulgarian patients and 22.1 for Greek patients.

Greek patients are older than the Bulgarians at the onset of acne. The female/male ratio is almost the same without statistical difference. A total of 66% (n = 82) of the Bulgarians reported not smoking, while this percentage is higher for Greece – 79% (n = 79). 62% (n = 77) from the Bulgarians indicated that they consumed alcohol never or rarely, while this percentage for Greece is a little bit lower – 58% (n = 58). BMI is almost equal – 23.1

for the Bulgarians and 24.9 for the Greek patients, and both are with normal weight, though the Greeks are at the upper limit. Both have experienced 20 to 25% ADR during their treatment. (Table 1)

According to the ECOB scores (Table 2), good adherence to treatment was documented in 42.0% of the Bulgarian patients on topical treatment and 39 on oral medication. For the Greek patients, good adherence to topical medication was judged to be good for 53% and 40% in oral treatment.

The likelihood of good adherence to oral medication was lower, both for Bulgaria and Greece. Factors associated with poor adherence included lack of satisfaction with treatment, long course of treatment and experience of a side effect.

DISCUSSION AND CONCLUSION

Adherence is one of the factors for achieving clinical improvement in the process of drug treatment. It can be defined as the extent to which a patient’s behavior follows the health specialist’s advice (19, 11).

Many tools have been developed to assess adherence to treatment, but we used a tool, specially designed to assess adherence to acne treatment. ECOB is a tool used worldwide and is easy for application and interpretation. (18, 22). It is an easy-to-use tool to assess treatment adherence, based on a

questionnaire that can be used daily by dermatologists. It is successfully applied in many studies of acne adherence assessment in recent years and that is why we have chosen it.

We compared the level of adherence to acne treatment in two neighboring countries Bulgaria and Greece and we found that the Bulgarian acne patients’ adherence to treatment is worst – average rate 59.5% while for the Greek patients it is 53.5%. On the one hand, this non-adherence rate is in the range of patient nonadherence in dermatology (34-75.5%) (19, 23), on the other it depends on the type of treatment – oral or topical. On the Balkans better adherence was assessed to topical treatment. The high rate of non-adherence with oral medications is somewhat surprising as it is an easier way for manifestation.

It has been shown that quality of life instrument is easy to be applied and can be beneficial in the routine clinical and pharmaceutical practice (24, 11). Our work shows that the use of ECOB can help dermatologists and pharmacists to identify non-adherent acne patients.

We found that satisfaction with treatment and side effects influence patients’ adherence to acne therapy. Other studies also have found that these factors influence treatment adherence as well, and severity of acne, age, and other (17). No matter the difference in GDP for Greece (USD 18 637 for

Table 1. Demographic characteristics of the patients in the study.

	Bulgaria (n = 125)	Greece (n = 100)
Age (mean), years	21.8 ± 8.1	22.1 ± 4.8
Age at onset of acne (mean), years	12.9 ± 12.8	14.2 ± 7.7
Female/male ratio, %	58/42	61/39
Experience of side effects(yes/no), %	25/75 (31/94)	20/80 (20/80)
Smoking (yes/no), %	34/66	21/79
Alcohol consumption (yes/no), %	38/62	42/58
BMI	23.1 ± 11.8	24.9 ± 9.2

Table 2. The level of adherence to topical and oral medication for the Bulgarian and Greek cohort of patients.

	Bulgaria (n = 125)			Greece (n = 100)		
Adherence to, (%):	N	good	poor	N	good	poor
Topical medication	n = 83	42	58	n = 69	53	47
Oral medication	n = 42	39	61	n = 31	40	60

2017) and Bulgaria (USD 8 064 for 2017) the price of the medicines especially topical medication is also a factor for non-adherence.

Greek and Bulgarian patients show a similar level of adherence to acne treatment – a high rate of non-adherence. This probably is contributed by the poor outcomes that do not coincide with the expected terms and benefits. These patients must be more precisely monitored about their adherence and this can be performed in the dermatology clinic or the pharmacy.

Conflict of interest

The authors declare no conflicts of interest.

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