

SHORT REPORT

Burden of treatment in severe acne vulgaris

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Abstract

Background: Acne is associated with a significant burden of disease related to the visual impact of facial lesions, symptoms such as pain, and sequelae such as scarring. However, little research has been performed on the acne-specific burden of treatment (BOT), defined as the workload of healthcare as well as its impact on functioning and well-being.

Objectives: The aim of this study was to examine the BOT of moderate-severe acne.

Methods: A prospective study was performed in our tertiary dermatology department. Patients attending the dermatology department with moderate-severe acne (defined as an Investigator's Global Assessment of acne severity of 3 or 4) were invited to complete a validated BOT questionnaire, modified for use in acne, with additional qualitative components.

Results: Of 50 patients, 68% were female, with a mean age of 22.6 years (range 16–45 years). Most (82%, $n = 41$) patients were on isotretinoin, with 18% ($n = 9$) on oral antibiotics. The average BOT was 4.2/10 (range 0–8.2) for topical therapies, 4.5/10 (range 2.7–6.8) for oral antibiotics, and 3.8/10 (range 0.69–6.9) for isotretinoin. From qualitative statements, the greatest burdens reported with topical treatment were unpleasant sensations, skin sensitivity, skin dryness, and lack of efficacy; with antibiotic therapy were the requirement for long-term treatment, limited efficacy, and side-effects including gastrointestinal upset; and with isotretinoin therapy were cheilitis and xerosis, cost, and need for blood tests. However, 58% ($n = 29$) of patients believed their overall BOT was decreased with isotretinoin, and 18% ($n = 9$) felt that it was unchanged with isotretinoin, with statements such as “the side effects can be tough, but the result is definitely worth it.”

Conclusions: The BOT associated with oral isotretinoin is similar or lower to topical therapies and oral antibiotics. This should be taken into consideration when optimizing the care of patients with acne.

KEYWORDS

acne vulgaris, burden of treatment, dermatology, patient outcomes, primary care, quality of life, therapy

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Acne vulgaris is the most common inflammatory dermatosis worldwide.¹ Acne is associated with a significant burden of disease, related to the visual impact of facial lesions, symptoms such as pain, and sequelae such as scarring.¹ However, little research has been performed into the acne-specific burden of treatment (BOT), defined as the workload of healthcare as well as its impact on patient functioning and well-being.² High BOT results in an inability to adhere to treatment plans and poorer outcomes for patients.² The aim of this study was to examine the BOT of moderate-severe acne.

A prospective single-center study was performed in a tertiary dermatology department in Cork, Ireland. Patients attending the dermatology department with moderate-severe acne (defined as an Investigator's Global Assessment of acne severity³ of 3 or 4) were invited to complete a validated BOT questionnaire,⁴ modified for use in acne, with additional qualitative components. Ethical approval was received from the Clinical Research Ethics Committee (CREC) of the Cork Teaching Hospitals (reference ECM 4 q 10/03/2020). Informed consent was obtained from all participants.

Fifty patients responded to the questionnaire. Two-thirds (68%, $n = 34$) of respondents were female, with a mean age of 22.6 years (range 16–45 years). Most (82%, $n = 41$) patients were on isotretinoin, with 18% ($n = 9$) on oral antibiotics at the time of the study. All patients on isotretinoin had previously been on topical treatments, and 66% ($n = 27$) had previously been on oral antibiotics. The average BOT was 4.2/10 (range 0–8.2) for topical therapies, 4.5/10 (range 2.7–6.8) for oral antibiotics, and 3.8/10 (range 0.69–6.9) for isotretinoin (Figure 1). For oral antibiotics, the lowest scores were for “taste, shape, or size of tablets” (1.9/10, range 0–10), and the highest scores were for “need to continue taking oral antibiotic tablets long-term” (5.4/10, range 0–10). For isotretinoin, the lowest

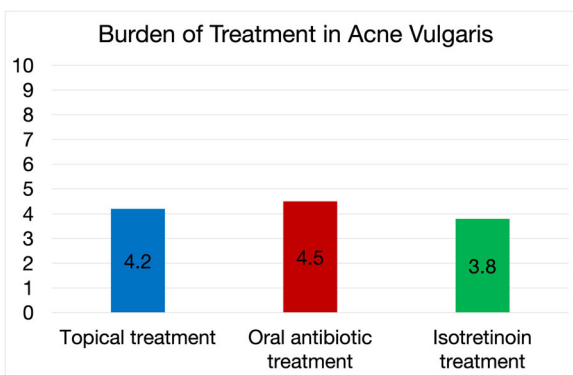


FIGURE 1 Results of treatment burden questionnaire scores ($n = 50$), divided according to topical treatment, oral antibiotic treatment, and isotretinoin treatment.

scores were for “taste, shape, or size of tablets” (1.1/10, range 0–7), and highest scores were for “necessary precautions such as pregnancy prevention measures for females, lip balms, skin moisturizing, etc.” (6.3/10, range 0–10). Average scores were higher for females (4.1/10) than males (3.2/10) ($p = 0.04$).

Themes were also identified from qualitative analysis of statements (Table 1). The greatest burdens reported with topical treatment were unpleasant sensations, skin sensitivity, skin dryness, and lack of efficacy. The greatest burdens reported with antibiotic therapy were the requirement for long-term treatment, limited efficacy, and side effects, including

TABLE 1 Qualitative statements related to burden of treatment for various acne treatments, with a number of similar statements in the second column.

| | <i>n</i> |
|---|----------|
| What is the biggest problem with creams/gels for acne treatment? | |
| ‘The dryness and irritation’ | 13 |
| ‘The horrible feeling and consistency of them sticking on my skin’ | 8 |
| ‘They don’t work’ | 8 |
| ‘It’s hard to remember to put it on all the time’ | 5 |
| ‘It’s much more annoying and time-consuming to put them on instead of taking a tablet’ | 3 |
| ‘Storing them in the fridge’ | 1 |
| What is the biggest problem with antibiotic tablets for acne treatment? | |
| ‘Having to take them long-term without curing the acne’ | 12 |
| ‘Remembering to take them every day’ | 9 |
| ‘Not effective’ | 9 |
| ‘Upset stomach, concerns about gut microbiome and liver stress’ | 4 |
| ‘Swallowing the tablet and the taste’ | 2 |
| ‘Allergic reaction’ | 1 |
| What is the biggest problem with isotretinoin/Roaccutane tablets for acne treatment? | |
| ‘Dryness of lips, skin, and nose’ | 23 |
| ‘The cost’ | 6 |
| ‘Blood tests’ | 4 |
| ‘Getting sunburnt easily’ | 4 |
| ‘Lower mood’ | 3 |
| ‘Remembering to take the tablets’ | 2 |
| ‘Avoiding alcohol’ | 1 |

gastrointestinal upset. The greatest burdens reported with isotretinoin therapy were cheilitis and xerosis, cost, and need for blood tests. However, 58% ($n = 29$) of patients believed their overall BOT was decreased with isotretinoin and 18% ($n = 9$) felt that it was unchanged with isotretinoin, with statements such as “the side effects can be tough, but the result is definitely worth it.”

Acne results in a significant physical and psychosocial burden on patients, and dermatologists should try to minimize further burden by prescribing treatments that are effective and well-tolerated. Strengths of this study included the use of a validated questionnaire coupled with qualitative statements and the high proportion of patients on isotretinoin, a surrogate marker for a cohort with severe acne. Limitations of this study included that most patients were on isotretinoin, so they were more likely to rate topical treatments and antibiotics as having a higher BOT, given that these treatments had failed. Patients on isotretinoin rated the BOT of isotretinoin as similar or less than that of oral antibiotics and topical therapies. Since laboratory abnormalities are extremely rare in young healthy patients taking isotretinoin,⁵ it may be reasonable to reduce or eliminate routine laboratory testing for select patients, which would reduce the BOT of isotretinoin further. Given that isotretinoin is more effective than topical treatments and oral antibiotics, the similar BOT of oral isotretinoin should be kept in mind by prescribers to optimize the treatment of acne.

AUTHOR CONTRIBUTIONS

Cathal O'Connor and Michelle Murphy conceived of the study. Lisa Kiely, Cathal O'Connor, and Michelle Murphy created the study design. Lisa Kiely, Cathal O'Connor, Aysha Al Moosa, and Emer Dight handed out questionnaires and collected demographic data. Lisa Kiely, Cathal O'Connor, Aysha Al Moosa, and Emer Dight performed data analysis. Lisa Kiely wrote the first draft of the manuscript, and Lisa Kiely, Cathal O'Connor, Aysha Al Moosa, Emer Dight, and Michelle Murphy reviewed the manuscript.

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CONFLICT OF INTEREST STATEMENT

The authors declare no conflict of interest.

DATA AVAILABILITY STATEMENT


Data is available on request.

ETHICS STATEMENT

Ethical approval was received from the Clinical Research Ethics Committee (CREC) of the Cork Teaching Hospitals (reference ECM 4 q 10/03/2020).

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REFERENCES

1. Layton AM, Thiboutot D, Tan J. Reviewing the global burden of acne: how could we improve care to reduce the burden? *Br J Dermatol.* 2021;184(2):219–25. <https://doi.org/10.1111/bjd.19477>
2. Eton D, Ramalho de Oliveira D, Egginton J, Ridgeway J, Odell L, May C, et al. Building a measurement framework of burden of treatment in complex patients with chronic conditions: a qualitative study. *Patient Relat Outcome Meas.* 2012;3:39–49. <https://doi.org/10.2147/PROM.S34681>
3. Alsulaimani H, Kokandi A, Khawandanh S, Hamad R. Severity of acne vulgaris: comparison of two assessment methods. *Clin Cosmet Investig Dermatol.* 2020;13:711–6. <https://doi.org/10.2147/CCID.S266320>
4. Tran VT, Harrington M, Montori VM, Barnes C, Wicks P, Ravaud P. Adaptation and validation of the treatment burden questionnaire (TBQ) in English using an Internet platform. *BMC Med.* 2014;12:109. <https://doi.org/10.1186/1741-7015-12-109>
5. Affleck A, Jackson D, Williams HC, Chavez P, Albrecht J. Is routine laboratory testing in healthy young patients taking isotretinoin necessary: a critically appraised topic. *Br J Dermatol.* 2022;187(6):857–65. <https://doi.org/10.1111/bjd.21840>

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