Implementation of a Cost-Effective Treatment Algorithm for the Management of Acne Vulgaris in College Students

Cristina M. Borsilli, BSN, RN, DNP Student

Significance of the Problem

- Acne is one of the most common skin disorders in the United States (AAD, 2017)
- Of those with acne, 53.8% are between the ages of 18 and 44 years old (AAD, 2017)
- Acne can lead to issues such as scarring, poor self-esteem, anxiety, and depression (Zaenglein et al., 2016), and can negatively impact quality of life (Cengiz & Gurel, 2020)

PICOT Question

In adult college students with acne vulgaris (P), how does a cost-effective acne treatment algorithm (I), compared to current practice without an algorithm (C) impact patient quality of life measured by the Acne-QoL questionnaire (O) over a 6-week period (T)?

Review of the Literature

Citation	Database	LOE/Quality
Asai et al. (2015)	TRIP	I[a], High[b]
Friedman et al. (2016)	MEDLINE	I[a], Good[b]
Gollnick, Friedrich, et al. (2015)	Citation Chase	VI[a], High[b]
Gollnick, Funke, et al. (2015)	MEDLINE	VI[a], High[b]
Le Cleach et al. (2017)	Citation Chase	I[a], High[b]
Nast et al. (2016)	TRIP	I[a], High[b]
Yang et al. (2020)	Cochrane	I[a], High[b]
Zaenglein et al. (2016)	TRIP	I[a], Good[b]

[a]Melynk and Fineout-Overholt; [b]Johns Hopkins

Best Practice Recommendations

- No universally recommended severity grading scale for acne vulgaris
  - However, a grading scale should be consistently used to measure response to treatment
- Treatment of acne varies by severity level
  - Almost clear, mild, moderate, severe, very severe
- Recommended and affordable medications include: Benzoyl Peroxide 2.5%, Adapalene 0.1%, Clindamycin 1%, and Doxycycline
- Treatment algorithm created based on the recommended agents for each severity level

Summary of Treatment Algorithm

Severity Level (based on modified IGA scale)	Recommended Treatment
Almost Clear	Benzoyl Peroxide 2.5% OR Adapalene 0.1%
Mild or Moderate	<u>1st Line</u> Benzoyl Peroxide 2.5% AND Adapalene 0.1% <u>2nd Line</u> Benzoyl Peroxide 2.5% AND Topical Clindamycin 1%
Severe or Very Severe	Benzoyl Peroxide 2.5% AND Adapalene 0.1% AND Systemic Doxycycline

Implementation

- **Setting**: university health center in NWI
- **Participants**: college students aged 18 and older with acne vulgaris
  - Intervention Group (algorithm used)
  - Comparison Group (no treatment)
- **Intervention**: clinician assessment of acne via modified Investigator Global Assessment (IGA) scale; severity level guides treatment
- **Tool**: Acne-QoL Questionnaire pre- and post-intervention measurements
- **Timeline**: 6-weeks, rolling entry

Evaluation

- **Primary Outcome**: Quality of Life
- **Statistical Tests:** paired-samples t test, mixed-design ANOVA
- No statistically significant difference in quality of life for comparison group; no significant difference between groups
- Statistically significant increase in quality of life for intervention group for three Acne-QoL domains

	Baseline $M(SD)$	6-Week $M(SD)$	t (df)	p value
Self-Perception	18.90 (7.17)	23.80 (7.39)	-3.17 (9)	.011*
Role-Emotional	18.10 (7.03)	23.70 (6.39)	-2.68 (9)	.025*
Role-Social	20.60 (3.78)	20.80 (5.18)	-.165 (9)	.872
Acne Symptoms	17.60 (3.92)	21.70 (5.62)	-3.48 (9)	.007*

*statistically significant ($p < .05$)

Conclusion and Recommendations

- Findings can be used to provide consistent management of acne vulgaris, which can improve patient quality of life
- Future EBP projects would benefit from a larger sample size and longer project timeline

VALPARAISO UNIVERSITY