

Improving Pediatric Acne Management and “Filling in Practice Gaps”: a Prospective Multicenter Study of Case-based Guideline Education

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Background: Practice Gaps in Pediatric Acne Treatment

The first evidence-based recommendations for acne management were published by the American Acne and Rosacea Society (AARS) and the American Academy of Pediatrics, in *Pediatrics*, in 2013. Yet, practice gaps — the gap between what physicians are doing in clinical practice compared with what should be done based on the best available evidence — are still significant in acne management. Studies have shown that physicians, especially non-dermatologists, tend to overprescribe antibiotics and underprescribe retinoids (1).

Objectives

To assess practice gaps in acne management and the utility of case-based learning to bridge the gaps.

Methods and Case-Based Questions

Participants were recruited at national pediatric conferences. A baseline questionnaire assessed knowledge of the AARS/AAP recommendations as well as confidence in prescribing according to the AARS recommendations. Five patients with varying age and acne severity were presented, with a “question per case” asking for the best treatment regimen. Providers participated in a 40-minute case-based lecture, reviewing acne management based on the AARS recommendations. The questionnaire was re-administered at 3 months.

- 1) 16-year-old girl with 25 closed comedones on her face and a few inflammatory lesions (mild acne).
- 2) A 10-year-old girl with 20 closed comedones on the forehead and no inflammatory lesions (mild acne).
- 3) A 14-year-old girl with 25 inflammatory papules and 35 open and closed comedones on the face (moderate acne).
- 4) A 14-year-old boy with a moderate amount of inflammatory papules and pustules on the forehead, cheek, chin, chest, and back (moderate acne).
- 5) A 15-year old boy with extensive inflammatory lesions and a small amount of diffuse scarring on his face (severe acne). He has been using OTC salicylic acid wash.



Mild acne in a teenager



Mild acne in a pre-teenager



Moderate acne in a teenager



Severe acne in a teenager

Results

Demographics

134 providers participated. We collected the following data: % (number)

Specialty: Pediatricians 81% (108); Pediatric Residents 10% (13); Nurse Practitioners 5% (7); Physician Assistants 4% (5); Family Practitioners 1% (1)

Gender: Female 64% (86); Male 36% (48)

Location: Suburban 58% (77); Urban 35% (47); Rural 7% (10)

Practice Setting: Pediatric Group Practice 44% (59); Academic Center 18% (24); Pediatric Solo Practice 16% (21); Multi-Specialty Group 16% (21); Hospital 5% (7); Other 1% (2)

Years in Practice: 0-5 years 19% (25); 5-10 years 13% (18); 10-20 years 23% (31); >20 years 45% (60)

Pre- and Immediately Post-Intervention

At baseline, almost 1/3 of providers self-rated knowledge of and confidence in prescribing according to the AARS recommendations as ‘poor.’ The average baseline test score was 70%. No difference in baseline test scores was seen based on practice location, setting, or years in practice. After the intervention, self-rated provider knowledge and confidence in using the AARS recommendations significantly increased ($p<0.05$)— 1/2 of providers rated their knowledge and confidence as “good-to-excellent.” Immediately post-intervention, provider test scores increased to 88% (<0.0001).

Three-Months Post-Intervention

The average test score increased significantly, from 70% at baseline to 86% at 3-months post-intervention ($p<0.05$). At 3 months, significantly more providers selected a regimen for moderate acne that utilized retinoids ($p<0.01$) and benzoyl peroxide ($p<0.05$). While 6% of providers inappropriately utilized antibiotics pre-intervention (i.e., treated with antibiotic monotherapy or topical antibiotics without benzoyl peroxide to decrease microbial resistance), no providers made these errors at 3-months post-intervention.

Conclusion

The AARS/AAP acne recommendations have not been well disseminated; many providers rated their knowledge of and confidence in using them as ‘poor.’ A case-based educational intervention significantly increased the number of providers treating in accordance with published recommendations. After the educational intervention, providers were more likely to use topical retinoids, and benzoyl peroxide in regimens with topical antibiotics, in accordance with guidelines.