Several topical and oral monotherapies/combinations are available for treating moderate to severe acne vulgaris, and a few are currently under review with the United States (US) Food and Drug Administration (FDA).

This Systematic Literature Review (SLR)/Network Meta-Analysis (NMA) assessed the comparative efficacy of topical Fixed-Dose Combinations (FDCs) based on the treatment success endpoint (practitioners achieving ≥2 grade reduction AND "Clear" or "Almost clear") status by week 12 on the Investigator’s Global Assessment (IGA) or equivalent [Evaluator's Global Severity Score (EGSS) and Investigator's Static Global Assessment (ISGA)] scales.

The NMA demonstrated that the topical triple-agent FDC gel of clindamycin phosphate 1.2%, adapalene 0.15%, and benzoyl peroxide 3.1% was superior to other topical FDCs.

The objective of this study was to compare the efficacy of topical FDCs for the treatment of moderate to severe acne vulgaris.

METHODS:

- Academia (MEDLINE, Embase, Cochrane CENTRAL, Paediatric Economic Database Evaluation and National Health Service Economic Evaluation Database) and non-academic databases (Health Technology Assessment databases, conference abstracts, and trial registries) were searched in May 2022, for identifying Randomized Controlled Trials (RCTs), with ≥1 topical FDC (currently approved/under review with FDA).
- RCTs included in the analysis evaluated acne severity using IGA or EGSS or ISGA scales.
- A Bayesian network meta-regression was conducted using the proportion of patients with moderate acne, mean inflammatory and non-inflammatory lesion counts at baseline as covariates for acne severity.
- The Bayesian simulation approach was used to develop a posterior rank order to assess the most efficacious treatment.
- The risk of bias was assessed with Cochrane Risk of Bias (RoB) v2.0 for quality assessment.

RESULTS:

The SLR identified twelve Phase II/III/IV RCTs comprising 8,349 patients across eight treatment groups, from 5,159 citation (Figure 1 and Table 1). Among these, eight studies were of high-quality as per RoB assessment. The network diagram for 12 studies establishing eight treatment groups is presented at Figure 2. The network diagram for 12 studies establishing eight treatment groups is presented at Figure 2.

Topical FDC of clindamycin phosphate 1.2%, adapalene 0.15%, and benzoyl peroxide 3.1% (first-triple-agent FDC) gel was clinically superior to other FDCs. The odds ratio for treatment success with topical triple-agent FDC was estimated to be 7.61 (95% Credible interval: 4.44 – 13.20) vs. Vehicle gel (Figure 3).

The network diagram suggested that topical triple-agent FDC was likely to be the most efficacious treatment among all topical FDCs with very low uncertainty around its superiority (Figure 4).

CONCLUSION:

The topical triple-agent FDC of clindamycin phosphate 1.2%, adapalene 0.15%, and benzoyl peroxide 3.1% gel, which is currently under FDA review (Prescription Drug User Fee Act date 10/20/2023), was clinically superior to all other topical FDC treatments for moderate to severe acne vulgaris.

REFERENCES:

12. Majidkul S, Attallah M, Bourdette M, Carles A, Danoy F. A surface under the cumulative ranking (SUCRA) value of 100% indicates that the top triple-agent FDC has the highest probability of being the most effective among all the comparators in the NMA (Figure 5).

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