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A comparative evaluation of benzoyl peroxide & clindamycin versus tretinoin and clindamycin in cases of acne vulgaris

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Abstract
Background: Acne vulgaris is a chronic, self-limiting, inflammatory disease of the pilosebaceous unit characterized by pleomorphic lesions like comedones, erythromatous papules, pustules, cysts and nodules. The present study compared benzoyl peroxide & clindamycin versus tretinoin and clindamycin in cases of Acne vulgaris.
Materials & Methods: 104 cases of Acne vulgaris were divided into 2 groups of 52 each. Group I patients were given benzoyl peroxide 2.5% gel once daily at bedtime and clindamycin 1% gel once daily topically and group II patients were prescribed tretinoin 0.025% and clindamycin 1% gel once daily at bedtime topically.
Results: There were 20 males and 32 females in group I and 18 males and 34 females in group II. The mean number of inflammatory lesions at baseline in group I was 12.4, in group II was 14, after 4 weeks was 4.7 and 7.2 in group I and II respectively, after 8 weeks was 1.2 and 3.4 in group I and II respectively and after 12 weeks was 0 and 2.1 in group I and group II respectively. The difference was significant ($P< 0.05$).
Conclusion: Combination of Benzoyl peroxide 2.5% & Clindamycin 1% was effective as compared to Tretinoin 0.025% & Clindamycin 1% in patients of Acne vulgaris.

Keywords: Acne vulgaris, benzoyl peroxide, clindamycin

Introduction
Acne vulgaris is a chronic, self-limiting, inflammatory disease of the pilosebaceous unit characterized by pleomorphic lesions like comedones, erythromatous papules, pustules, cysts and nodules [1]. Although the course of acne may be self-limiting, the sequelae can be life-long with pitted or hypertrophic scar formation. It is more common and more severe in males than in females, relating it to androgen activity. It starts at puberty or a few months earlier. The peak incidence is between 14-17 years in women and 16–19 years in men [2]. It seems to be familial, but owing to the high prevalence of the disease this has been extremely difficult to assess. Nodulocystic acne has been reported to be more common in white males than in black males, and one group of investigators has found that acne is more severe in patients with the XYY genotype [3].
The psychosocial impact of acne has been well documented. Body image issues associated with acne can result in depression, anxiety, social isolation, and low self-esteem [4]. The teenage years in particular are notorious for being socially stressful and challenging; the cosmetic effects of acne can greatly impact an individual's emotional and psychological health at this very crucial point in development. When managing with these patients, the nurse practitioner (NP) needs to be considerate of these potential issues. Emotional support and understanding, in addition to medical therapy, are crucial [5]. The present study compared benzoyl peroxide & clindamycin versus tretinoin and clindamycin in cases of Acne vulgaris.

Materials and Methods
The present study comprised of 104 cases of Acne vulgaris of both genders. All were informed regarding the study and their consent was obtained.
Data such as name, age, gender etc. was recorded. Patients were divided into 2 groups of 52 each.

Group I patients were given benzoyl peroxide 2.5% gel once daily at bedtime and clindamycin 1% gel once daily topically and group II patients were prescribed tretinoin 0.025% and clindamycin 1% gel once daily at bedtime topically. Global efficacy evaluation was evaluated based on the validated investigator's global assessment score (IGA) at baseline, 4 weeks, 8 weeks and 12 weeks. Results thus obtained were subjected to statistical analysis. P value less than 0.05 was considered significant.

Results

Table 1: Distribution of patients

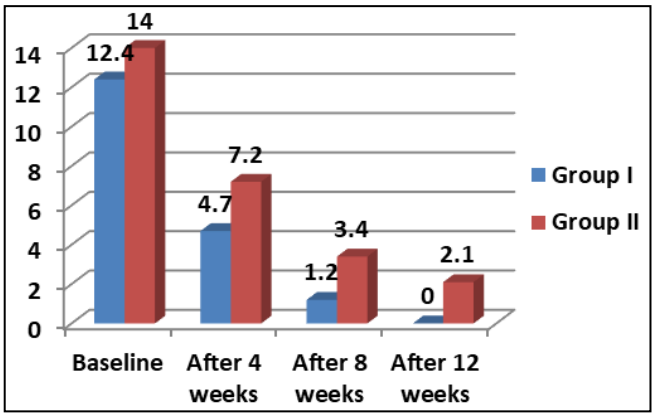
Groups	Group I	Group II
Drug	Benzoyl peroxide 2.5% & Clindamycin 1%	Tretinoin 0.025% & Clindamycin 1%
M:F	20:32	18:34

Table I shows that there were 20 males and 32 females in group I and 18 males and 34 females in group II.

Table 2: Assessment of Investigator's Global Assessment score

IGA	Group I	Group II	P value
Baseline	12.4	14	0.12
After 4 weeks	4.7	7.2	0.05
After 8 weeks	1.2	3.4	0.02
After 12 weeks	0	2.1	0.001

Table II, graph I shows that mean number of inflammatory lesions at baseline in group I was 12.4, in group II was 14, after 4 weeks was 4.7 and 7.2 in group I and II respectively, after 8 weeks was 1.2 and 3.4 in group I and II respectively and after 12 weeks was 0 and 2.1 in group I and group II respectively. The difference was significant ($P< 0.05$).



Graph 1: Assessment of Investigator's Global Assessment score

Discussion

The pathophysiology of acne vulgaris is complex, with both internal and external triggers. However, the underlying cause is increased sebum production and abnormal desquamation of epithelial cells [6]. One of the initial events in the evolution of acne lesions is the development of the microcomedo, or blockage of the follicular canal. Increased cohesiveness of corneocytes and hyperkeratosis of the follicular lining cause keratin and sebum to accumulate in the follicle. This creates a plug (comedo) above the sebaceous gland duct [7]. As these cells continue to pack into the follicle, the comedo expands behind a small follicular opening to the skin. This results in distension of the follicle and formation of a closed comedone (firm, elevated, white or yellow papule). If the pore begins to dilate at the surface of the skin due to this retention keratosis, an open comedone results (blackhead) [8]. The present study compared benzoyl peroxide & clindamycin versus tretinoin and clindamycin in cases of Acne vulgaris.

In present study, there were 20 males and 32 females in group I and 18 males and 34 females in group II. Kaur *et al*. [9] compared the efficacy and safety of topical benzoyl peroxide and clindamycin versus topical benzoyl peroxide and nadifloxacin versus topical tretinoin and clindamycin in patients of acne vulgaris. 100 patients between 15 and 35 years having ≥2 and ≤30 inflammatory and/or noninflammatory lesions with Investigator's Global Assessment (IGA) score 2/3 were randomly divided into 3 groups. Group A was prescribed benzoyl peroxide 2.5% gel and clindamycin 1% gel, Group B was prescribed benzoyl peroxide 2.5% gel and nadifloxacin 1% cream and Group C was prescribed tretinoin 0.025% and clindamycin 1% gel. Total number of lesions and adverse effects during the treatment were assessed at 0, 4, 8, 12 weeks with IGA score. There was statistically significant reduction in total number of lesions with better improvement in Group A. Adverse drug reactions during the study showed a better safety profile of Group B which is found to be statistically significant also.

We found that mean number of inflammatory lesions at baseline in group I was 12.4, in group II was 14, after 4 weeks was 4.7 and 7.2 in group I and II respectively, after 8 weeks was 1.2 and 3.4 in group I and II respectively and after 12 weeks was 0 and 2.1 in group I and group II respectively. Jain *et al*. [10]. Compared the efficacy of two combinations benzoyl peroxide-clindamycin and benzoyl peroxide-metronidazole therapy regimes with each other, no statistically significant difference was found. Hence, both of these groups have same efficacy. Another study conducted by Choudhury *et al*. [11] compared efficacy of two combinations benzoyl peroxide-nadifloxacin and benzoyl peroxide-clindamycin was done. No differences in total lesion counts was observed among these two groups. Improvements in the IGA scores were more in benzoyl peroxide-nadifloxacin than benzoyl peroxide-clindamycin, but the difference did not reach to statistically significant values.

A study was conducted by Shwetha *et al*. [12] where comparison of efficacy of combination of topical 1% clindamycin and 2.5% benzoyl peroxide was done with 1% clindamycin and 0.1% - adaplene in mild to moderate acne. Here, combination of topical 1% clindamycin and 0.1%-adaplene was found to be more efficacious than the other group.

Conclusion

Authors found that combination of Benzoyl peroxide 2.5% & Clindamycin 1% was effective as compared to Tretinoin 0.025% & Clindamycin 1% in patients of Acne vulgaris.

References

1. Pretsch A, Nagl M, Schwendinger K, Kreiseder B, Wiederstein M, Pretsch D, *et al*. Antimicrobial and anti-inflammatory activities of endophytic fungi *Talaromyces wortmannii* extracts against acne-inducing bacteria. PLoS One 2014;9:e97929.
2. Gregoriou S, Kritsotaki E, Katoulis A, Rigopoulos D.

Use of tazarotene foam for the treatment of acne vulgaris. Clin Cosmet Investig Dermatol 2014;7:165-70.
3. Kraft J, Freiman A. Management of acne. CMAJ 2011;183:E430-5.
4. Lai KW, Mercurio MG. Update on the treatment of acne vulgaris. J Clin Outcomes Manag 2009;16:115-26.
5. Del Rosso JQ. Defining criteria used to evaluate response to treatment of acne vulgaris. Cutis 2006;78:117-21.
6. Well D. Acne vulgaris: A review of causes and treatment options. Journal of the Dermatology Nurses' Association 2014;6(6):302-9.
7. Webster G, Rich P, Gold MH, Mraz S, Calvarese B, Chen D, *et al*. Efficacy and tolerability of a fixed combination of clindamycin phosphate (1.2%) and low concentration benzoyl peroxide (2.5%) aqueous gel in moderate or severe acne subpopulations 5%) J Drugs Dermatol 2009;8:736-43.
8. Tutakne MA, Vaishampayan SS. Acne, rosacea and perioral dermatitis. In: Valia RG, Valia AR, editors. IAVDL Textbook of Dermatology. 3rd ed. Mumbai: Bhalani Publication House 2008, 839-43.
9. Kaur J, Sehgal VK, Gupta AK, Singh SP. A comparative study to evaluate the efficacy and safety of combination topical preparations in acne vulgaris. International Journal of Applied and Basic Medical Research 2015;5(2):106.
10. Jain VK, Chopra KL, Dayal S. Comparative evaluation of topical benzoyl peroxide, metronidazole and benzoyl peroxide – Clindamycin combination in treatment of acne vulgaris. Indian J Dermatol Venereol Leprol 1998;64:71-4.
11. Choudhury S, Chatterjee S, Sarkar DK, Dutta RN. Efficacy and safety of topical nadifloxacin and benzoyl peroxide versus clindamycin and benzoyl peroxide in acne vulgaris: A randomized controlled trial. Indian J Pharmacol 2011;43:628-31.
12. Shwetha H, Geetha A, Revathi TN. A comparative study of efficacy and safety of combination of topical 1% clindamycin and 0.1% adaplene with 1% clindamycin and 2.5% benzoyl peroxide in mild to moderate acne at a tertiary care hospital. J Chem Pharm Res 2014;6:736-41.