

ORIGINAL RESEARCH

Assessment of the efficacy of NB-UVB, Goeckerman therapy, and the effect of the addition of retinoids to the treatment regimen in the treatment of psoriasis

Dr. Saurabh Agrawal

Assistant Professor, Department of Dermatology, United Institute of Medical Sciences, Prayagraj, Uttar Pradesh, India

Corresponding Author

Dr. Saurabh Agrawal

Assistant Professor, Department of Dermatology, United Institute of Medical Sciences, Prayagraj, Uttar Pradesh, India

Received: 04 March, 2022

Acceptance: 07 April, 2022

ABSTRACT

Background: Psoriasis is a chronic autoimmune skin disorder characterized by the rapid buildup of skin cells, leading to the formation of thick, scaly patches on the skin's surface. The present study was conducted to assess the efficacy of NB-UVB, Goeckerman therapy, and the effect of the addition of retinoids to the treatment regimen in the treatment of psoriasis. **Materials & Methods:** 45 psoriasis patients of both genders were divided into 3 groups of 15 each. Group I were given NB-UVB, group II were treated with re-NB-UVB and group III with GOECKERMAN. Duration of disease (years), PASI score, treatment responses were recorded. **Results:** Group I had 8 males and 7 females, group II had 6 males and 9 females and group III had 7 males and 8 females. The mean disease duration was 8.4 years in group I, 9.5 years in group II and 11.3 years in group III. The mean PASI score was 11.2 in group I, 12.6 in group II and 13.7 in group III. The response was unresponsive (<PASI - 50) seen in 3, 1 and 1, moderate response (PASI - 50-75) in 2, 3 and 1 and good response (>PASI - 75) in 10, 11 and 13 patients respectively. **Conclusion:** Goeckerman therapy found to be more effective as compared to NB-UVB phototherapy. Acitretin allowed for a decrease in UV exposure and improved efficacy, even though it did not affect treatment results in terms of PASI-75 responses when added to either NB-UVB or Goeckerman therapy.

Keywords: Psoriasis, autoimmune skin disorder, Goeckerman therapy

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution -Non Commercial-Share Alike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

INTRODUCTION

Psoriasis is a chronic autoimmune skin disorder characterized by the rapid buildup of skin cells, leading to the formation of thick, scaly patches on the skin's surface. It is a non-contagious condition that often involves inflammation and can affect various parts of the body. The exact cause of psoriasis is not fully understood, but it is believed to result from a combination of genetic, environmental, and immune system factors.¹

The most common form of psoriasis is plaque psoriasis, where raised, red patches covered with a silvery-white buildup of dead skin cells (scales) form on the skin. Psoriasis can be itchy, and in some cases, it may cause discomfort or pain.² Scratching the affected areas can worsen the condition and may lead to the development of lesions. There are different types of psoriasis, including plaque psoriasis, guttate psoriasis, inverse psoriasis, pustular psoriasis, and

erythrodermic psoriasis. Each type has its characteristic features.³

Going forward, NB-UVB is the preferred phototherapy method, as Goeckerman treatment has become less popular.⁴ But the latter is still utilized even in the era of biologics at numerous dermatology clinics. Goeckerman therapy has numerous drawbacks, including being messy, labor-intensive, hospital-based, and time-consuming, yet it is said to be at least as effective as biologics in terms of reaction time.⁵ The present study was conducted to assess the efficacy of NB-UVB, Goeckerman therapy, and the effect of the addition of retinoids to the treatment regimen in the treatment of psoriasis.

MATERIALS & METHODS

The present study consisted of 45 psoriasis patients of both genders. All gave their written consent to participate in the study.

Data such as name, age, gender etc. was recorded. Patients were divided into 3 groups of 15 each. Group I were given NB-UVB, group II were treated with re-NB-UVB and group III with GOECKERMAN.

Duration of disease (years), PASI score, treatment responses were recorded. Data thus obtained were subjected to statistical analysis. P value < 0.05 was considered significant.

RESULTS

Table I Distribution of patients

Groups	Group I	Group II	Group III
Method	NB-UVB	re-NB-UVB	GOECKERMAN
M:F	8:7	6:9	7:8

Table I shows that group I had 8 males and 7 females, group II had 6 males and 9 females and group III had 7 males and 8 females.

Table II Assessment of parameters

Parameters	Group I	Group II	Group III	P value
Duration of disease (years)	8.4	9.5	11.3	0.04
PASI score	11.2	12.6	13.7	0.05

Table II shows that mean duration of disease was 8.4 years in group I, 9.5 years in group II and 11.3 years in group III. The mean PASI score was 11.2 in group I, 12.6 in group II and 13.7 in group III. The difference was significant (P< 0.05).

Graph I Assessment of parameters

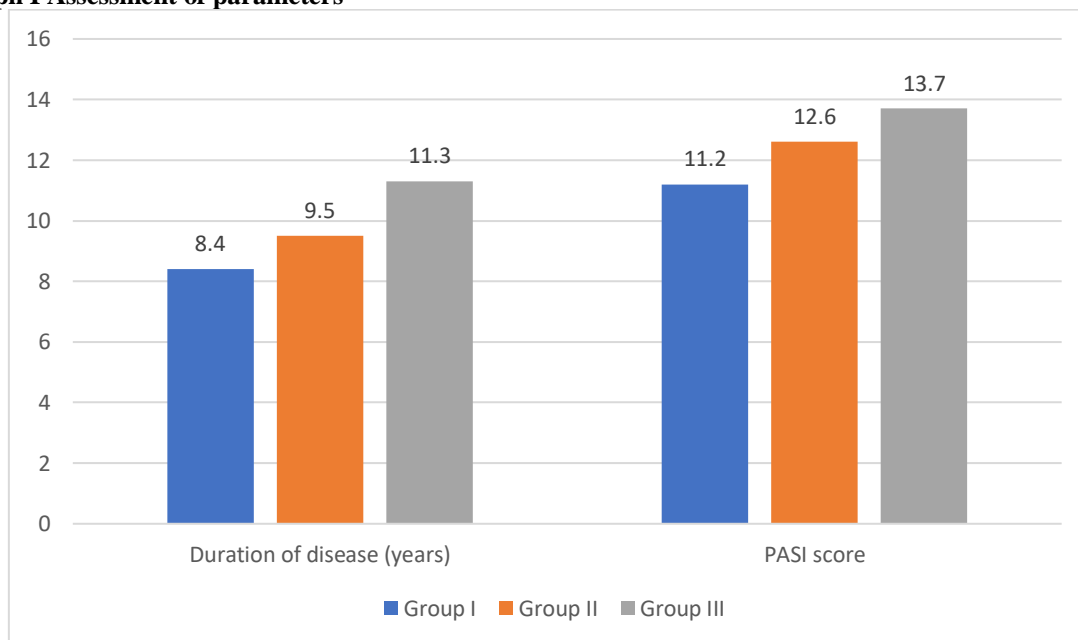


Table III Comparison of treatment responses

Treatment responses	Group I	Group II	Group III	P value
Unresponsive(<PASI - 50)	3	1	1	0.05
Moderate response(PASI - 50-75)	2	3	1	0.04
Good response(>PASI - 75)	10	11	13	0.05

Table III shows that response was unresponsive (<PASI - 50) seen in 3, 1 and 1, moderate response (PASI - 50-75) in 2, 3 and 1 and good response (>PASI - 75) in 10, 11 and 13 patients respectively. The difference was significant (P< 0.05).

DISCUSSION

Various factors can trigger or exacerbate psoriasis symptoms. Common triggers include stress, infections, certain medications, skin injuries, and weather changes.⁶Psoriasis can have a significant impact on a person's quality of life, affecting not only the physical aspect but also emotional well-being.⁷

Dealing with a visible skin condition may lead to self-esteem issues and social challenges. Acitretin is considered to be the drug of choice for combination with NB-UVB to improve efficacy, safety and tolerability of NB-UVB.^{8,9}The present study was conducted to assess the efficacy of NB-UVB, Goeckerman therapy, and the effect of the addition of

retinoids to the treatment regimen in the treatment of psoriasis.

We found that group I had 8 males and 7 females, group II had 6 males and 9 females and group III had 7 males and 8 females. Caliskan et al¹⁰ in their study 65 patients who underwent 81 courses of treatment was undertaken. PASI-75 responses in the NB-UVB, retinoid + NB-UVB (re-NB), Goeckerman and retinoid + Goeckerman (re-Goeckerman) groups were achieved for 12 of 31 patients (39%), 13 of 21 patients (62%), 15 of 17 patients (88%) and 10 of 12 patients, respectively. The addition of acitretin to both modalities reduced both the number of sessions and the cumulative ultraviolet-B dose delivered.

We observed that the mean disease duration was 8.4 years in group I, 9.5 years in group II and 11.3 years in group III. The mean PASI score was 11.2 in group I, 12.6 in group II and 13.7 in group III. Serrao R et al¹¹ in their study twenty-three consecutive patients with psoriasis recalcitrant to biologic treatment received Goeckerman treatment. Thirteen patients were female, and 21 were white; the mean age was 51 years (range, 11- 82 years). Patients had no success with various numbers of biologic therapies: one agent (16 patients), two agents (5 patients), three agents (1 patient), and five agents (1 patient). The biologic agents included etanercept (18 patients), infliximab (3 patients), efalizumab (9 patients), adalimumab (3 patients), and alefacept (1 patient). The duration of each biologic treatment ranged from 2 weeks to 36 months. The average duration of Goeckerman treatment was 23 days (range, 15-31 days). In response to treatment, 20 patients had [80% clearance of psoriasis; 3 patients had 50% to 80% clearance. During Goeckerman treatment, no patient had a worsening of psoriasis or any adverse effects.

We found that response was unresponsive (<PASI - 50) seen in 3, 1 and 1, moderate response (PASI - 50-75) in 2, 3 and 1 and good response (>PASI - 75) in 10, 11 and 13 patients respectively. Kampitak T et al¹² in their study twenty-nine patients with plaque-type psoriasis who were treated with NB- UVB alone or in combination with acitretin were analyzed for treatment outcome in terms of total numbers and cumulative doses of narrowband UVB treatments. Of these, nine had the combination while 20 received NB-UVB alone. The combination of low-dose acitretin (25 mg/day) and NB-UVB resulted in marked improvement of patients. The numbers of irradiation, final doses and cumulative doses of NB-UVB were lower albeit not statistically significant in the

combination group. The combination was well tolerated and associated with typical retinoid and NB-UVB side effects.

The limitation of the study is the small sample size.

CONCLUSION

Authors found that

REFERENCES

1. Bagel J. LCD plus NB-UVB reduces time to improvement of psoriasis vs. NB-UVB alone. *J Drugs Dermatol* 2009;8:351-7.
2. Lee E, Koo J. Modern modified 'ultra' Goeckerman therapy: A PASI assessment of a very effective therapy for psoriasis resistant to both prebiologic and biologic therapies. *J Dermatolog Treat* 2005;16:102-7.
3. Lapolla W, Yentzer BA, Bagel J, Halvorson CR, Feldman SR. A review of phototherapy protocols for psoriasis treatment. *J Am Acad Dermatol* 2011;64:936-49.
4. Lebwohl M, Drake L, Menter A, Koo J, Gottlieb AB, Zanolli M, et al. Consensus conference: Acitretin in combination with UVB or PUVA in the treatment of psoriasis. *J Am Acad Dermatol* 2001;45:544-53.
5. Carretero G, Ribera M, Belinchón I, Carrascosa JM, Puig L, Ferrandiz C, et al. Guidelines for the use of acitretin in psoriasis. *Psoriasis Group of the Spanish Academy of Dermatology and Venereology. ActasDermosifiliogr* 2013;104:598-616.
6. Ozdemir M, Engin B, Baysal I, Mevlitoglu I. A randomized comparison of acitretin-narrow-band TL-01 phototherapy and acitretin-psoralen plus ultraviolet A for psoriasis. *Acta Derm Venereol* 2008;88:589-93.
7. Menter A, Cram DL. The Goeckerman regimen in two psoriasis day care centers. *J Am Acad Dermatol* 1983;9:59-65.
8. Koo J, Lebwohl M. Duration of remission of psoriasis therapies. *J Am Acad Dermatol* 1999;41:51-9.
9. Gupta R, Debbaneh M, Butler D, Huynh M, Levin E, Leon A, et al. The Goeckerman regimen for the treatment of moderate to severe psoriasis. *J Vis Exp* 2013;(77):50509.
10. Çaliskan E, Tunca M, Açıkgöz, G, Arca E, Yürekli A, Akar A. Narrow band ultraviolet-B versus Goeckerman therapy for psoriasis with and without acitretin: A retrospective study. *Indian J Dermatol Venereol Leprol* 2015;81:584-7.
11. Serrao R, Davis MD. Goeckerman treatment for remission of psoriasis refractory to biologic therapy. *J Am Acad Dermatol* 2009;60:348-9.
12. Kampitak T, Asawanonda P. The efficacy of combination treatment with narrowband UVB (TL-01) and acitretin vs narrowband UVB alone in plaque-type psoriasis: A retrospective study. *J Med Assoc Thai* 2006;89:20-4.