

Research Article



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ASSESSING THE SAFETY AND EFFECTIVENESS OF WEEKEND CYCLOSPORINE MEDICATION AS MAINTENANCE IN PARTICIPANTS WITH MODERATE TO SEVERE CHRONIC PLAQUE PSORIASIS TO AVOID FUTURE AGGRAVATION

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ABSTRACT

Background: Psoriasis is a systemic, inflammatory, and chronic illness that manifests mostly in the joints and skin of the affected individuals, further reducing their quality of life. Few people experience severe illness exacerbations on a regular basis, necessitating recurrent systemic medication. However, there is limited information on the role of systemic maintenance medication in psoriasis patients in preventing these periodic disease flares.

Aim: The current research sought to investigate the safety and effectiveness of weekend cyclosporine medication as maintenance in moderate to severe chronic plaque psoriasis patients in order to avoid numerous future exacerbations.

Methods: In this retrospective study, 44 subjects with psoriasis and a history of ≥ 3 exacerbations in the last year were given WCT (weekend cyclosporine treatment). They were compared to a control group of gender and age-matched subjects who were not on systemic maintenance therapy or WCT.

Results: The study found that 18.2% (n=8) of Group I patients had illness aggravation, which was considerably lower than the control group, where exacerbation was seen in 95.5% (n=42) subjects (p=0.00). Subjects in Group I (WCT) experienced substantially fewer exacerbations (0.21 ± 0.51 vs. 2.93 ± 1.41 ; p=0.00) than the control group. In Group I, 9.1% (n=8) of patients experienced adverse events, including acneiform eruptions in four subjects and myalgia and hyperplasia in two subjects each, compared to six occurrences including four acneiform eruptions and two headaches (p=1.00).

Conclusions: The current study suggests that weekend cyclosporine medication significantly reduces disease exacerbation in persons with moderate to severe chronic plaque psoriasis and is an effective and safe maintenance therapy modality in these patients.

Keywords: Cyclosporin, Maintenance Therapy, Psoriasis, Weekend Cyclosporin Therapy.

INTRODUCTION

Psoriasis is a chronic inflammatory systemic disease that manifests mostly in the joints and skin of the affected individuals. Psoriasis' clinical history is unpredictable, and a small percentage of patients experience recurrent exacerbations of the illness. However, a variety of recognized therapeutic techniques are available to induce remission in psoriasis patients. Existing literature evidence is insufficient for determining the efficacy and safety of various therapies in sustaining and avoiding illness remission.¹

Oral CYC (cyclosporin) is one of the most often used medications for inducing fast remission in patients with moderate to severe psoriasis. Different cyclosporine therapy regimens have been evaluated for psoriasis maintenance and remission induction.

However, persistent and long-term oral cyclosporin therapy may be linked with a variety of side effects, including the risk of nephrotoxicity, necessitating termination when remission is achieved. Disease aggravation is frequently linked with psoriasis following withdrawal of cyclosporin or other systemic therapy, which frustrates both the patient and the treating practitioner. Few regimens and techniques used and recommended weekend cyclosporine medication for remission maintenance in moderate to severe chronic plaque psoriasis.²

WCT (weekend cyclosporine treatment) involves administering cyclosporine twice a week as a maintenance medication for psoriasis. Previous studies found that weekend and regular cyclosporine medication had equivalent effectiveness in avoiding psoriasis aggravation. Other research indicates that relapse time is extended in psoriasis patients on WCT.³

Clinically, the use of WCT can be justified as maintenance treatment to avoid exacerbation in a subset of people with moderate to severe chronic plaque psoriasis who have had many disease flares in the recent past.⁴ As a result, the current research sought to determine the safety and effectiveness of weekend cyclosporine medication as maintenance in participants with moderate to severe chronic plaque psoriasis in order to avoid frequent future exacerbations.

MATERIALS AND METHODS

The current retrospective clinical study sought to evaluate the safety and effectiveness of weekend cyclosporine medication as maintenance in moderate to severe chronic plaque psoriasis patients in order to avoid numerous future exacerbations. The study also found that tinea incognito affected the eyelids rather than the face, which had been injured by topical steroids. All individuals provided verbal and written informed consent before to participation.

The study comprised participants with moderate to severe psoriasis who were diagnosed and reported to the Institute within the study period. The demographic and clinical data taken from the institutional records, including adverse events, treatment plans, investigations, and severity scores in these participants at each visit, were evaluated and updated in the institutional records.

Cyclosporine is typically used at a daily dose of 3-5mg/kg/day to manage disease activity in moderate to severe psoriasis. A favourable clinical response is indicated by a PASI score of 75 or 90. After establishing a favourable clinical response, daily cyclosporine is tapered over 6-10 weeks, with a 1mg daily dosage reduced every other week, and then discontinued.

Among subjects with good clinical response, daily cyclosporine resulted in a 90% reduction in psoriasis area and severity index (PASI-90), whereas few subjects with three or more disease exacerbations in a year were maintained on WCT at a dose of 3-5 mg/kg/day administered only on two consecutive days in a week, and the remainder were managed without systemic agents.

If a patient on WCT or without a systemic drug experienced illness aggravation, they were often reintroduced on daily cyclosporine to achieve clinical remission ($\leq$ PASI-90) before reducing their dose. Cyclosporine was chosen as a systemic drug to treat exacerbation in these participants based on their prior history of daily cyclosporine use. Subjects using daily cyclosporine or WCT were monitored every two weeks for the first four weeks, then every four weeks thereafter.

The study included subjects aged 18 or older with chronic plaque psoriasis, a disease duration of ≥ 2 years managed with daily cyclosporine, and a history of 3 or more exacerbations (PASI ≥ 10 or Body surface area (BSA) ≥ 10 during exacerbations) in the last year before starting cyclosporine. Complete data was required.

After screening, individuals were maintained at 3-5mg/kg/day as an induction dosage and clinical remission with $>$ PASI 90, followed by tapering and termination of daily cyclosporine dose and remained on WCT for at least 6 months as a maintenance phase contained Group I. Group II included participants in clinical remission (PASI ≥ 90) who received daily CYC during the induction phase, tapered and terminated the dosage, but did not receive WCT or any systemic medication for maintenance. Subjects in both groups were age and gender-matched.

To control exacerbations during the maintenance phase, both groups switched to a daily cyclosporine dosage of 3-5mg/kg/day, which was reduced and terminated once PASI > 90 was attained. Both groups were allowed to use antihistamines and topical treatment as needed during the induction and maintenance phases. The research excluded participants who were taking any other systemic medication than cyclosporine throughout the exacerbation maintenance period. To preserve consistency, subjects in Group II were eliminated if there was any non-uniformity during the maintenance phase, such as missing data, irregular follow-up, or non-compliance.

When assessing outcome parameters, both groups' maintenance phase was used as the research length. Both groups had a maintenance period that lasted at least 6 months. All individuals' baseline and follow-up visits included complete blood counts, lipid profiles, liver and renal function tests, and blood pressure measurements.

The study evaluated the number of psoriasis participants who experienced exacerbations of the condition, as well as the overall number of exacerbations during the maintenance phase. During the maintenance phase, exacerbations were

classified as PASI > 10 or a 10% involvement of the body surface area (BSA). All individuals were observed for any adverse effects, which included hypertension and nephrotoxicity.

The statistics were collected using the Institute's clinical records. Clinical and demographic information was examined retrospectively and documented on a standardized proforma. The collected data were statistically analyzed using SPSS (Statistical Package for the Social Sciences) software version 24.0 (IBM Corp., Armonk, NY, USA) for descriptive measures, Student t-test, ANOVA (analysis of variance), and Chi-square test. The data were presented in the form of mean and standard deviation, as well as frequency and percentage. A p-value of <0.05 was considered.

RESULTS

The current retrospective clinical study sought to evaluate the safety and effectiveness of weekend cyclosporine medication as maintenance in moderate to severe chronic plaque psoriasis patients in order to avoid numerous future exacerbations. In this retrospective study, 44 subjects with confirmed psoriasis and a history of ≥ 3 exacerbations in the last year were given WCT (weekend cyclosporine treatment). They were compared to a control group of gender- and age-matched subjects who did not receive any systemic maintenance therapy or WCT. The mean age of the research individuals in Groups I and II was similar, with $p=0.74$.

Groups I and II had 24 men and 0 females ($p=1.00$). Mean weight and illness duration were similarly statistically similar across the two groups ($p=0.34$ and 0.25 , respectively). Mean baseline BSA, PASI, mean exacerbation frequency, and mean maintenance phase length were also comparable across Group I and II participants ($p=0.67$, 0.67 , 0.91 , and 1.00 , respectively) (Table 1).

For the comparison of exacerbation in two groups of study participants during/after the maintenance phase, patients with exacerbation during the maintenance phase were 18.2% ($n=8$) in Group I and 95.5% ($n=42$) in Group II, with Group II considerably higher ($p=0.00$). Exacerbations were 0, 1, 2, 3, 4, 5, and 6 in 81.8% ($n=36$), 13.6% ($n=6$), 4.5% ($n=2$), 0, 0, 0, and 0 in Group I, and 4.1% ($n=2$), 9.1% ($n=4$), 22.7% ($n=10$), 31.8% ($n=14$), 18.2% ($n=8$), 9.1% ($n=4$), and 4.5% ($n=2$), respectively. The intergroup difference was statistically significant at $p<0.001$ (Table 2).

The study results showed that when comparing the mean number of exacerbations, PASI scores, and body surface area (BSA) in study subjects after the maintenance phase, the total number of exacerbations during the maintenance phase was 9.1% ($n=4$) in Group I and 0 in Group II, indicating a statistically non-significant difference ($p = 0.47$). At the end of the maintenance phase, the mean PASI in Group II was 2.93 ± 1.41 , substantially greater than Group I's 0.21 ± 0.51 ($p=0.00$). At the end of the maintenance period, BSA in Group II was 4.05 ± 2.08 , considerably higher than Group I's 1.96 ± 1.50 ($p=0.00$) (Table 3).

When comparing adverse events in two groups of study subjects at the end of maintenance therapy, acneiform eruptions, myalgia, gingival hyperplasia, and headache were seen in 4, 2, 2, and 0 subjects from Group I, while acneiform eruptions and headache were seen in 4 and 2 subjects from Group II. Adverse events were substantially greater in Group I than in Group II, $p=0.47$ (Table 4).

DISCUSSION

The study compared 44 subjects with confirmed psoriasis and a history of ≥ 3 exacerbations in the last year to a control group of gender- and age-matched subjects not on systemic maintenance therapy or WCT. The mean age of the research individuals in Groups I and II was similar, with $p=0.74$. Groups I and II had 24 men and 0 females ($p=1.00$). Mean weight and illness duration were similarly statistically similar across the two groups ($p=0.34$ and 0.25 , respectively).

Mean baseline BSA, PASI, mean exacerbation number, and mean maintenance phase length were all comparable across Group I and II participants ($p=0.67$, 0.67 , 0.91 , and 1.00 , respectively). These findings were similar to those of Maza A et al⁵ in 2011 and Ronzi G et al⁶ in 2011, who evaluated patients with demographic data similar to the current study in their separate investigations.

The study results revealed that when comparing exacerbation in two groups of study participants during/after the maintenance phase, patients with exacerbation during the maintenance phase were 18.2% ($n=8$) in Group I and 95.5% ($n=42$) in Group II, which was substantially greater in Group II ($p=0.00$).

Exacerbations were 0, 1, 2, 3, 4, 5, and 6 in 81.8% ($n=36$), 13.6% ($n=6$), 4.5% ($n=2$), 0, 0, 0, and 0 in Group I, and 4.1% ($n=2$), 9.1% ($n=4$), 22.7% ($n=10$), 31.8% ($n=14$), 18.2% ($n=8$), 9.1% ($n=4$), and 4.5% ($n=2$), respectively. The intergroup difference was statistically significant, with $p<0.001$. These findings were consistent with the findings of Garrido Colmenero C et al⁷ in 2015 and Golbari NM et al⁸ in 2018, who reported results for comparing exacerbation in two groups of study subjects during/after the maintenance phase that were comparable to the results of the current study.

When the mean number of exacerbations, PASI scores, and body surface area (BSA) in study subjects after the maintenance phase were compared, the total number of exacerbations during the maintenance phase was 9.1% (n=4) in Group I and 0 in Group II, indicating a statistically non-significant difference ($p=0.47$). After the maintenance phase, Group II had a substantially higher mean PASI (2.93 ± 1.41) than Group I (0.21 ± 0.51) ($p=0.00$).

At the end of the maintenance period, BSA in Group II was 4.05 ± 2.08 , considerably higher than Group I's 1.96 ± 1.50 ($p=0.00$). These findings were consistent with those of Nast A. et al⁹ in 2012 and Mrowietz U et al¹⁰ in 2012, who found results similar to the current study for the mean number of exacerbations, PASI scores, and body surface area (BSA). When comparing adverse events in two groups of study subjects at the end of maintenance therapy, acneiform eruptions, myalgia, gingival hyperplasia, and headache were seen in 4, 2, 2, and 0 subjects from Group I, while acneiform eruptions and headache were seen in 4 and 2 subjects from Group II.

Adverse occurrences were considerably greater in Group I compared to Group II ($p=0.47$). These findings were consistent with the findings of Fernandes IC et al¹¹ in 2013 and Colombo D et al¹² in 2010, who reported adverse events in their investigations that were similar to the results of the current research.

CONCLUSIONS

The present study, within its limitations, concludes that weekend cyclosporine treatment results in significantly decreasing the disease exacerbation in subjects with moderate to severe chronic plaque psoriasis and is efficacious and safe maintenance therapy mode in these subjects. However, the study was single-institutional and assessed fewer subjects for smaller recall. Hence, further studies are needed with a larger sample size and longer monitoring shortly.

REFERENCES

1. Touw C, Hakkaart-Van Roijen L, Verboom P, Paul C, Rutten F, Finlay A. Quality of life and clinical outcome in psoriasis patients using intermittent cyclosporin. *Br J Dermatol* 2001;144:967–72.
2. Chaidemenos G, Mourellou O, Avgoustinaki N, Papakonstantinou M, Karakatsanis G, Katsambas A. Intermittent vs. continuous 1-year cyclosporin use in chronic plaque psoriasis. *J Eur Acad Dermatol Venereol* 2007;21:1203–8.
3. Lebwohl M, Ellis C, Gottlieb A, Koo J, Krueger G, Linden K, et al. Cyclosporine consensus conference: With emphasis on the treatment of psoriasis. *J Am Acad Dermatol* 1998;39:464–75.
4. Errichetti E, Ankad BS, Jha AK, Sonthalia S, Akay BN, Bakos R, et al. International Dermoscopy Society criteria for nonneoplastic dermatoses (general dermatology): Validation for skin of color through a Delphi expert consensus. *Int J Dermatol* 2022;61:461-71.
5. Maza A, Montaudié H, Sbidian E, Gallini A, Aractingi S, Aubin F, et al. Oral cyclosporin in psoriasis: A systematic review on treatment modalities, risk of kidney toxicity and evidence for use in non-plaque psoriasis. *J Eur Acad Dermatol Venereol* 2011;25:19–27.
6. Ronzi G, Moggio E, Grasso V, Roveda G, Carugno A, Alborghetti A, et al. Ciclosporina-A e week-end therapy nella psoriasi a placche: La nostra esperienza. *Bollettino della Società Medico Chirurgica di Pavia* 2011;124:217–25.
7. Garrido Colmenero C, Blasco Morente G, Tercedor Sánchez J. Oral cyclosporine weekend therapy: A new maintenance therapeutic option in patients with severe atopic dermatitis. *Pediatr Dermatol* 2015;32:551–2.
8. Golbari NM, Porter ML, Kimball AB. Current guidelines for psoriasis treatment: A work in progress. *Cutis* 2018;101:10–2.
9. Nast A, Boehncke WH, Mrowietz U, Ockenfels HM, Philipp S, Reich K, et al. S3–Guidelines on the treatment of psoriasis vulgaris. *J Dtsch Dermatol Ges* 2012;10:s1–s95.
10. Mrowietz U. Implementing treatment goals for successful long-term management of psoriasis. *J Eur Acad Dermatol Venereol*. 2012;26:12–20.
11. Fernandes IC, Torres T, Selores M. Maintenance treatment of psoriasis with cyclosporine A: comparison between continuous and weekend therapy. *J Am Acad Dermatol* 2013;68:341–2.
12. Colombo D, Cassano N, Altomare G, Giannetti A, Vena G. Psoriasis relapse evaluation with week-end cyclosporine A treatment: Results of a randomized, double-blind, multicenter study. *Int J Immunopathol Pharmacol* 2010;23:1143–52.

S. No	Characteristics	Group I	Group II	p-value
1.	Mean age (years)	33.9±9.5	34.8±10.0	0.74
2.	Gender			
a)	Males	24	24	1.00
b)	Females	20	20	
3.	Mean weight (kg)	66.7±7.4	68.5±5.2	0.34
4.	Disease duration (months)	50.6±12.2	54.6±11.6	0.25
5.	BSA baseline	1.84±0.91	1.68±0.96	0.67
6.	PASI baseline	2.64±1.20	2.49±1.24	0.67
7.	Mean exacerbation number	3.39±0.57	3.34±0.47	0.91
8.	Mean maintenance phase duration	11.62±3.11	11.62±3.11	1.00

Table 1: Baseline clinic demographic data in Group I and ii study subjects on starting of maintenance phase

S. No	Outcome parameters	Group I n (%)	Group II n (%)	p-value
1.	Subjects with exacerbation during the maintenance phase (n)	8 (18.2)	42 (95.5)	0.00
2.	Number of exacerbations			<0.001
a)	0	36 (81.8)	2 (4.5)	
b)	1	6 (13.6)	4 (9.1)	
c)	2	2 (4.5)	10 (22.7)	
d)	3	0	14 (31.8)	
e)	4	0	8 (18.2)	
f)	5	0	4 (9.1)	
g)	6	0	2 (4.5)	

Table 2: Comparison of exacerbation in two groups of study subjects during/after maintenance phase

S. No	Parameters	Group I n (%)	Group II n (%)	p-value
1.	Total number of exacerbations during the maintenance phase	4 (9.1)	0	0.47
2.	Mean PASI at the end of the maintenance phase	0.21±0.51	2.93±1.41	0.00
3.	BSA at the end of the maintenance phase	1.96±1.50	4.05±2.08	0.00

Table 3: Comparison of the mean number of exacerbations, PASI scores, and body surface area (BSA) in study subjects after the maintenance phase

S. No	Adverse events	Group I n	Group II n	p-value
1.	Acneiform eruptions	4	4	0.47
2.	Myalgia	2		
3.	Gingival hyperplasia	2		
4.	Headache	0	2	

Table 4: Comparison of adverse events in two groups of study subjects at the end of maintenance therapy