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Research Article

A Comparative Study of Efficacy of Dapsone and Corticosteroids for the Treatment of Lichen Planus

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Abstract: Lichen Planus is defined as papulo-squamous disorder of unknown etiology characterised by itchy papules over the flexors of the body. Lichen planus presents as pruritic, polygonal, purplish, plane topped papules or plaques. Lichen planus (LP) has various morphological variants with lichen planus vulgaris being the commonest variant. Mucous membranes, nails and hair are also involved in Lichen Planus. The objective of our study is to compare the efficacy of Dapsone and Corticosteroids in the treatment of lichen planus. This is a single centre, randomized, comparative study which was conducted in year 2015. The study was done in 60 patients of lichen planus. Lichen planus was confirmed by clinical and histopathological examination. Two groups of 30 patients each were made. One group was given dapsone 100 mg daily & an antihistamine for 3 months and the second group was given oral corticosteroids 10 mg twice daily for 3 months. The follow up of patients was done at 2, 4, 6 & 12 weeks and observations were noted and analysed. It was observed that the results were equally better with oral dapsone than oral corticosteroids alone. These results suggest that dapsone may be a better treatment modality with respect to efficacy, safety and cost-effectiveness in treatment of lichen planus.
Keywords: lichen planus, dapsone, corticosteroids, efficacy, papulo squamous, flexors

INTRODUCTION:

Lichen Planus is defined as papulo-squamous disorder of unknown etiology characterised by itchy papules, plaque over the flexors of the body. Lichen planus presents as pruritic, polygonal, purplish, plane topped papules or plaques. Lichen planus (LP) has various morphological variants with lichen planus vulgaris being the commonest variant. Lichen Planus is found to be significantly associated with hypertension, diabetes mellitus and other autoimmune diseases. Mucous membranes, nails and hair are also involved in Lichen Planus[1]. Cellular and humoral immunity play an important role in pathogenesis of the disease. Purple color of the rash occurs due to melanin incontinence and vascular inflammatory reaction. Various drugs like local and systemic corticosteroids, Dapsone, Vit. A, Cyclosporine and Cyclophosphamide have been tried but Dapsone has been reported to give encouraging results[2-5]. Lichen Planus is an autoimmune disorder and Dapsone inhibits adherence of antibodies to neutrophils which is important in autoimmune skin diseases and secondly it acts as an anti-inflammatory agent by inhibiting the release of chemo tactic factors from mast cells. Dapsone, an antimicrobial drug is also proved to be Immunomodulators [6], on the other hand corticosteroids are found to be effective by reducing pain and inflammation. Corticosteroids should b reserved for acute exacerbation, and multiple or widespread lesions [7].

Lichen Planus is worldwide in distribution. The reported incidence from a study done in Delhi, India was 0.8% and from the USA 0.4%[8,9.] LP was most common in the 20-40 years age group in the Indian series[8] and in the 30-60 years age group in the western series[10]. LP is a rare disease in children although it has been reported in infants[11]. It appears to be more common among men although in the western countries female predominance is reported [8, 12]. Familial LP can occur and affected person often

develop disease at an earlier age than patient with idiopathic non-familial LP. Most of the patients have generalized lesions that persist for more than 2 years and tend to recur[13, 14].

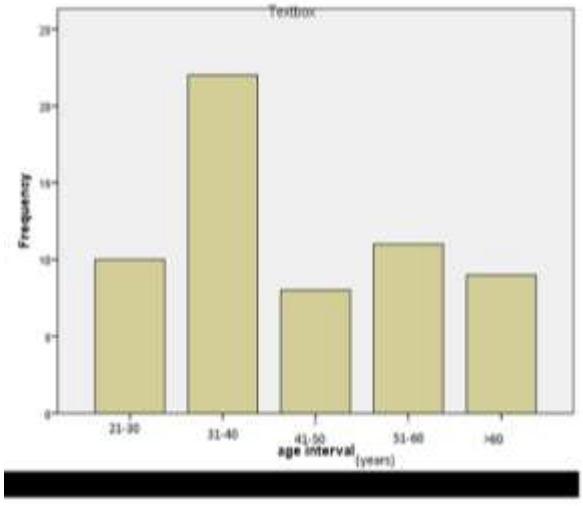
The course of the disease is variable. In majority of the patients the average duration is about 15 months. Oral and hypertrophic LP tends to have a chronic course. Relapse occurs in less than 20% of the patients[15, 16]. Clinical variants are Hypertrophic lichen planus, Actinic lichen planus, Linear lichen planus, Lichen planus pigmentosus, Annular lichen planus, Atrophic lichen planus, Guttate lichen planus, Follicular lichen planus, Ulcerative lichen planus, Oral lichen planus, Lichen planus of the nail and Bullous Lichen planus. Associated conditions are reported to be associated with LP but the true nature of the association is difficult to determine and may be fortuitous in some cases. There is also an association of lichen planus with hepatitis C, Vitiligo, thymoma [17, 19] alopecia areata [17, 19] myasthenia gravis [17] and hypo-gammaglobulinemia [18, 19] and sub-acute lupus erythematosus [20]. Since LP is essentially benign and self-limiting, treatment is largely symptomatic. Potentially provocative medication should be discontinued unless absolutely required. Patient who came in contact with photographic developers should rinse well with water and use an acidic skin cleanser. Activities that traumatize susceptible tissues like alcohol and tobacco consumption, sharp teeth or ill fitted denture should be eliminated. Patients with actinic LP must be protected with sunscreens. Other treatment options are Corticosteroids, Retinoids, PUVA, Cyclosporin, and Dapsone and in some cases surgery may be required.

MATERIAL AND METHOD:

In this study, patients presenting to Skin OPD of Adesh Institute of Medical Sciences and Research, Bathinda will be involved. The patients were divided into two groups. In Group 1 patients, Dapsone 100 mg o.d. and antihistamines will be given and in Group 2, Corticosteroids 10 mg b.d. for 3 months. The patients both men and women, aged 20 to 75 years having lichen planus will be included. Eligible patients were required to go for clinical, histopathology and microscopic including routine investigations including hemoglobin, total leukocyte count, erythrocyte sedimentation rate, urine analysis and stool examination. Exclusion criteria for patients are having predisposing conditions such as diabetes or other peripheral circular disorders or HIV patients with known hypersensitivity and patients with impaired liver and/or kidney functions. Woman will be excluded if they are pregnant, breastfeeding, or planning a pregnancy. All patients will be evaluated and assessed at 15 days interval for period of 3 months. Clinical interpretation will be made by observing reduction of itching, regression of lesions and appearance of new lesions.

RESULTS:

Out of 60 patients, maximum number of patients were in the age group of 31-40 years (36.7%) and others were 21-30 years (16.7%), 41-50 years (13.3%), 51-60 years (18.3%) and >60 years (15%) as shown in Figure 1. Out of 60, 33 were females and 27 were males as shown in figure 2. Most common type of lichen planus observed was lichen planus vulgaris and other types were actinic lichen planus (16.7%), follicular lichen planus (16.7%), nail lichen planus (3.3%), macular lichen planus (3.3%), and oral lichen planus (16.7%) as shown in figure 3. In our study, corticosteroids show better effect at 2 weeks, 4 weeks and 6 weeks interval. Dapsone shows better effect after 4 weeks onwards and maximum at 10 weeks. Effectiveness of dapsone and corticosteroid is shown is figure 4.



age interval

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	10	16.7	16.7	16.7
	2	22	36.7	36.7	53.3
	3	8	13.3	13.3	66.7
	4	11	18.3	18.3	85.0
	5	9	15.0	15.0	100.0
	Total	60	100.0	100.0	

Fig-1

sex

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	F	33	55.0	55.0	55.0
	M	27	45.0	45.0	100.0
	Total	60	100.0	100.0	

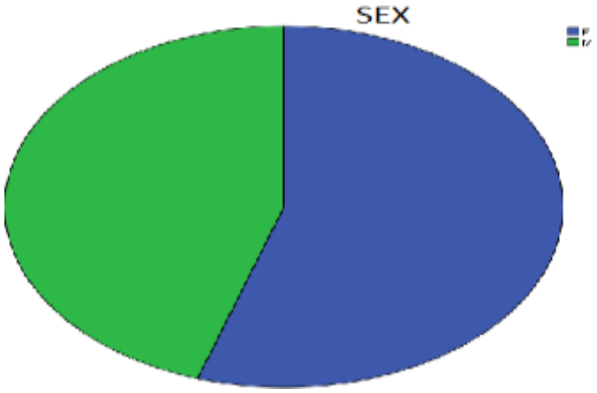


Fig-2

type

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	actinic lichen planus	10	16.7	16.7	16.7
	follicular lichen planus	10	16.7	16.7	33.3
	lichen planus vulgaris	29	48.3	48.3	81.7
	macular lichen planus	2	3.3	3.3	85.0
	nail lichen planus	2	3.3	3.3	88.3
	oral lichen planus	7	11.7	11.7	100.0
	Total	60	100.0	100.0	

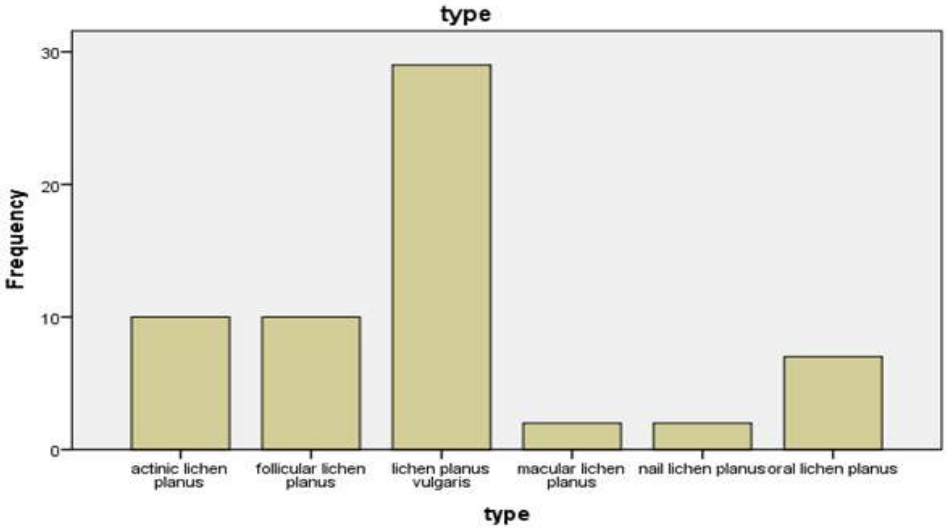


Fig-3

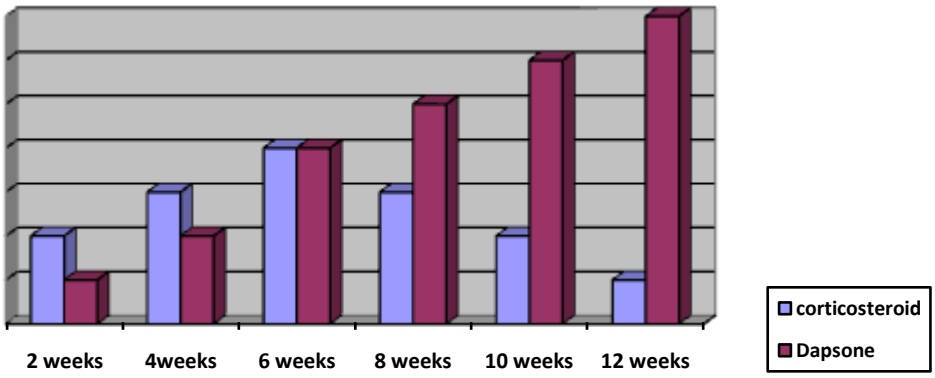


Fig-4

DISCUSSION

Our aim to do this study is to compare the efficacy of dapsone and corticosteroids in lichen planus. Dapsone has a therapeutic effect in several dermatoses and in lichen planus. It has been used by several physicians [2, 3, 4, 5]. It is used in dermatology for its anti-inflammatory properties. It may be due to inhibition of myeloperoxidase hydrogen peroxide cytotoxic system. Effect of dapsone in lymphocyte rich dermatoses may be through a similar mechanism proposed for polymorphonuclear rich infiltrative dermatoses [21]. It may have an ant-inflammatory effect by inhibiting the release of inflammatory or chemo tactic factors from mast cells [22]. Dapsone is known to produce reduced responsiveness of lymphocytes to PHA in vitro and in vivo. [23]. The most common untoward effect of dapsone is hemolysis of varying degree. It is dose related and develops in almost every individual treatment with 200-300 mg of dapsone daily. In our study, 58% patients showed good response with corticosteroids while in 72% patients showed good response with dapsone at the end of 3 months therapy. It was also observed that LP with mucous membrane involvement showed excellent response to dapsone in 3 month's time. Similar observations were seen in study by Chopra et al on Dapsone versus corticosteroids in lichen planus [1]. Similar are the observations by Kumar et al who reported good response in 66.5% of cases [4]. In our study, it was concluded that the dapsone is definitely superior to corticosteroids alone in treating LP cases.

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