Journal of Pakistan Association of Dermatologists. 2020; **30(1)**: 53-57.

Original Article

Treatment of eruptive lichen planus with oral acyclovir

Aliya Akhtar, Nighat Fatima, Farah Sattar, Shazia Zubair, Sumara Rashid, Mehwish Saeed

Department of Dermatology, Nishtar Medical University, Multan.

Abstract

Objective To measure the efficacy of oral acyclovir for treatment of eruptive lichen planus.

Methods This quasi experimental study was done in outpatient department of Dermatology, Nishtar Medical University, Multan, from 01-05-2018 to 31-10-2018. Total thirty patients of eruptive lichen planus of either sex and age ranging from 18 – 65 years were included in this study. They were given oral acyclovir 400 mg three times a day for six weeks. Patients were followed up at three and six weeks and then up to three months to find out the efficacy of treatment.

Results A total of 30 patients were enrolled in the study with mean age of 37.76%±13.92. Males were 46.66% and females were 53.33%. 23 out of total 30 (76.7%) patients showed effective response to oral acyclovir.

Conclusion Oral Acyclovir is an effective and innovative treatment for eruptive lichen planus.

Key words
Eruptive lichen planus (eLP), hepatitis B virus (HBV), hepatitis C virus (HCV), diabetes mellitus (DM), upper respiratory tract infection (URTI), acyclovir (Acv).

Introduction

Lichen Planus (LP) is an idiopathic chronic inflammatory skin disease affecting the skin and mucosal membranes.[1] Consisting of typical purplish, pruritic, plain topped, polygonal, polished, papules and plaques of different shapes and sizes but same histology. Eruptive LP, or generalized or exanthematous LP is a rare entity of LP.

Causative factors of eruptive LP are not very clear. Several studies have suggested a role for hepatitis C virus (HCV) in LP.[2,3] The role played by HCV in triggering LP remains unclear. Even IFN therapy for HCV has been found to initiate or worsen lesions of LP.[4] Other viruses have been implicated in the pathogenesis of LP including hepatitis B virus (HBV),[5] human herpes virus 6 [HHV-6] and HHV-7[6] and varicella zoster virus.[7,8] Eruptions have also been reported after immunization, especially hepatitis B vaccination.[9,10] Acupuncture is also a cause.[11]

Address for correspondence
Dr. Aliya Akhtar,
Department of Dermatology,
Nishtar Medical University, Multan.
Email: draliyaakhtar@gmail.com

Methods

A quasi-experimental study was performed at the department of dermatology, Nishtar hospital, Multan from 01-05-2018 to 31-10-18. Patients were enrolled after getting prior approval from the hospital's ethical committee. An informed written consent was obtained from every patient. Total 30 patients were included in the study by non-probability consecutive sampling. Inclusion criteria were patients of eruptive lichen planus diagnosed clinically up to 3 months of duration, of both sexes and age. An exclusion criterion

was patients of chronic LP with duration of more than 3 months and history of renal disease.

Severity of disease was noted clinically by taking photographs before the start of the therapy. Baseline demographic information such as name, age, sex was noted. Liver function tests and renal parameters were requested and they were found to be normal. Serology for viral hepatitis (HCV and HBV) was done with variable results. Real time Polymerase Chain Reaction (PCR) for HHV6, HHV7 and HHV8 was not available. After taking informed consent, patients were given 400mg oral acyclovir, three times a day along with oral levocetirizine 5 mg daily, up to six weeks. Response to treatment was assessed clinically every 3 weeks and comparing these with pre-treatment photographs. Improvement was seen at the end of 6 weeks by 70% reduction in skin lesions. No adverse effects were reported.

Statistical analysis was performed using SPSS version 20. Quantitative variables like age and reduction in skin lesions were calculated as mean and standard deviation. Qualitative variables like sex, association with hepatitis B, C were calculated as frequency and variables. Mean reduction in skin lesions was measured by subtracting post-treatment, 70% reduction in skin lesions from 100.

Results

Study included 30 patients with eruptive lichen planus. There were 16 female patients (53.33%) and 14 male patients (46.66%). Mean age of study cases was 37.76±13.92 years, with minimum age 18 years and maximum age 65 years.

HBV infection was noted in 6 (20%) while anti-HCV reactive in 14(46.7%) patients with LP. History of DM was noted in 8(26.7%). Mean duration of symptoms of disease was 2.26±0.71 months.

Table 1 Association of response with different parameters

Parameters		*Response*		*P-Value*
		Yes	*No*	
Gender				
	Male	9	5	0.204
	Female	14	2	
HBV				
	Positive	5	1	1.00
	Negative	18	6	
HCV				
	Positive	10	06	0.086
	Negative	13	01	
DM				
	Yes	06	02	1.000
	No	17	05	
Etiology				
	Yes	05	00	0.304
	No	18	07	
RTI				
	Yes	05	02	1.000
	No	18	05	

Drugs related association was positive in 5(16.7%) and association of URTI was noted in 7 (23.3%) LP patients. Response with acyclovir was noted in 23(76.7%) and association of response with different parameters is given in **Table 1**.

Discussion

Lichen planus (LP) is an inflammatory disease affecting the skin and mucosae, triggered by cell mediated immunity. Eruptive LP presents as generalized, progressive, erythematous, plain topped, polygonal macules and papules that may become purplish in color. After resolution, there may be residual hyperpigmentation.[12] Lesions can occur on the extremities, trunk and may even involve the mucosae.[13] Lesions erupting in different phases may have similar morphology, suggesting evolutionary chronology.

There is no well documented line of treatment

Figure 1a Before treatment

Figure 1b After 6 weeks

for eruptive LP. However, taking into account the widespread nature of the disease, systemic therapy may be recommended. Systemic corticosteroid therapy alone or with phototherapy has been effective in curing current lesions and prevention of new lesions.[14,15] Similarly pulsed Itraconazole was found to be effective.[16] Topical steroids, cyclosporine and systemic griseofulvin were not effective but Etretinate was found effective.[17] However, eruptive LP may clear spontaneously, as with most other types of LP.

LP is an itchy, immune mediated dermatosis

Figure 2a Before treatment

Figure 2b After 6 weeks

with strong viral etiology. Data indicate viral etiology, which may be placed into two groups. One in which there is an anecdotal suggestion, like VZV, EBV, CMV, HPV, HIV and herpes virus (HHV-7, HHV-6). The other group includes viruses that have a documented association with LP,like HCV.[18] Nagao et al.(2016) studied that LP patients having HCV were treated with a combination of daclatasvir and asunaprevir completely without any side effects.[19] High dose acyclovir is proven effective against HHV-6 but has less effects on HHV-7 due to lack of thymidine kinase enzyme required for the action of acyclovir.[20] Standard treatment for Varicella-Zoster is Acyclovir 800 mg 5 times a day but for the treatment of herpes viruses like HSV lower doses are recommended.[21] Keeping this in view, antiviral drugs may be useful in the treatment of LP, especially, the eruptive type with a short history, in the initial phase ,when the viruses are replicating actively.[22] Medical treatment of LP includes a variety of topical and oral medication. Most of these treatment

modalities are time taking, lack durable remission, and have potential side effects and these are the drawbacks of these modalities. There is a growing demand for fast and easy compliance and side effects free novel therapy. Focusing on all these facts, we conducted this study using acyclovir an anti-viral agent, in a dose of 400mg thrice daily, along with levocetirizine as immune-modulator and anti-pruritic agent. Our study results showed significant improvement in skin lesions with these agents and with no drug-associated side effects reported by the patients. However, lesions clearance was uniform in all patients regardless of association with hepatitis B and C.

Conclusion

Oral acyclovir in combination with levocetirizine is an effective therapy for the treatment of eruptive lichen planus. Future studies are needed to identify optimal dosage and possible factors affecting response to antiviral treatment. Also larger sample size with different variants of LP should be considered to study the relationship of viral etiology and role of antivirals in the treatment of LP.

References

1. Hettiarachchi PV, Hettiarachchi RM, Jayasinghe RD, Sitheeque M. Comparison of topical tacrolimus and clobetasol in the management of symptomatic oral lichen planus: A double-blinded, randomized clinical trial in Sri Lanka. J Investigative Clin Dent 2017; 8(4): e12237.
2. Georgescu SR, Mitran MI, Mitran CI, Sarbu MI, Nicolae I, Matei C, Caruntu C, Neagu M, Popa MI. Potential pathogenic mechanisms involved in the association between lichen planus and hepatitis C virus infection. Exp Ther Med 2019; 17(2): 1045-51.
3. Alrashdan MS, Cirillo N, McCullough M. Oral lichen planus: a literature review and update. Arch Dermatol Res 2016; 308(8): 539-51.
4. Aamir S, Ullah Z, Iqbal Z, Khan AA, Yaqub F, Malik K. Cutaneous manifestations of interferon alfa and ribavirin for hepatitis C. J Pak Assoc Dermatol. 2016; 18(1): 14-20.
5. Ifeanyi OC, Akinboro AO, Ezejoifor IO, Onunu AN, Okwara BU. Epidemiologic and Clinical Differences Between Classic and Hypertrophic Lichen Planus in Nigeria. Serb J Dermatol Venereol. 2019; 11(1): 3-12.
6. Hieta N, Hiltunen-Back E. Human herpes virus 7 in a patient with recurrent vulvar ulceration. Actadermato-venereologica. 2016; 96(7): 1002-3.
7. Sajini L, Anjaneyan G, Jagadeesan S, Panicker VV, Sreedevan V, Gopakumar JT. Zero prevalence of hepatitis B and hepatitis C infections in clinicopathologically proven lichen planus cases: a cross sectional study at a tertiary care centre in South India. Int J Res Dermatol 2017; 3(3): 351-4.
8. Kazanowska-Dygdała M, Duś I, Radwan-Oczko M. The presence of Helicobacter pylori in oral cavities of patients with leukoplakia and oral lichen planus. J Applied Oral Sci 2016; 24(1): 18-23.
9. Mirza FN, Leonov A, Greydanus DE. Dermatological side effects to certain vaccines. J Pain Management 2016; 9(2): 147.
10. Pektas SD, Kutucularoglu E, Ozoguz P. The First Reported Adult Case of Lichen Planus following Rabies Vaccinatıon. Kuwait Med J 2017; 49(4): 340.
11. Murthy SA, Ballal S. Herpes Viruses. Comprehensive Approach to Infections in Dermatology 2016; 12: 203.
12. Jones J, Marquart JD, Logemann NF, DiBlasi DR. Lichen striatus-like eruption in an adult following hepatitis B vaccination: a case report and review of the literature. Dermatol Online J 2018; 24(7): 13030/qt1hr764kv.
13. Welz-Kubiak K, Reich A, Szepietowski JC. Clinical aspects of itch in lichen planus. Actadermato-venereologica 2017; 97(4): 505-8.
14. Al-Mutairi N, Joshi A, Zaki A, Sharma AK, Nour-Eldin O. Acute generalized lichen planus treated with weekly betamethasone 5-mg oral mini-pulse therapy. J Drugs Dermatol 2005; 4(2): 218–20.
15. Fleming J, Diaz-Cano S, Higgins E. Eruptive lichen planus triggered by acupuncture. Arch Dermatol 2011; 147(3): 361–2.

16. Khandpur S, Sugandhan S, Sharma VK. Pulsed itraconazole therapy in eruptive lichen planus. J Eur Acad Dermatol Venereol 2009; 23(1): 98–101.
17. Kanzaki T, Otake N, Nagai M. Eruptive lichen planus. J Dermatol 1992; 19(4):234–7.
18. Nahidi Y, TayyebiMeibodi N, Ghazvini K, Esmaily H, Esmaeelzadeh M. Association of classic lichen planus with humanherpesvirus-7 infection. Int J Dermatol 2017; 56, 49-53.
19. Nagao Y, Kimura K, Kawahigashi Y, Sata M. Successful treatment of hepatitis C virus-associated oral lichen planus by interferon-free therapy with direct-acting antivirals. Clin Translational Gastroenterol 2016; 7, e179.
20. Ganguly SA. randomized, double-blind, placebo-controlled study of efficacy of oral acyclovir in the treatment of pityriasisrosea. J Clin Diagnostic Res 2014; 8: YC01–YC04.
21. De Ruiter A, Thin RN. Genital herpes. A guide to pharmacological therapy. Drugs 1994; 47: 297–304.
22. Jackson JL, Gibbons R, Meyer G, Inouye L. The effect of treating herpes zoster with oral acyclovir in preventing postherpetic neuralgia. A meta-analysis. Arch Internal Med 1997; 157: 909–912.