International Journal of Dermatology, Venereology and Leprosy Sciences

E-ISSN: 2664-942X
P-ISSN: 2664-9411
Derma 2018; 1(2): 13-15
Received: 10-05-2018
Accepted: 12-06-2018

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To assess serum uric acid level in patients with lichen planus: A clinical study serum uric acid & lichen planus

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DOI: https://doi.org/10.33545/26649411.2018.v1.i2a.13

Abstract
Background: Lichen planus is a Subacute to chronic, inflammatory, papulosquamous disorder characterized by typical lesions. The present study was conducted to assess serum uric acid level in patients with lichen planus.
Materials & Methods: The present study was conducted on 46 cases (Group I) of lichen planus of both genders reported to the department. Equal number of controls (Group II) was also included. Detailed clinical history followed by general physical examination, systemic examination and mucocutaneous examination was done in all. Serum Uric acid was assayed using Cora lab 3000 semiautoanalyser by uricase method.
Results: Out of 46 patients, males were 11 and females were 35. The mean serum uric acid level in group I was 3.51 mg% and in group II was 3.98 mg%. The difference was significant (P< 0.05). Common type of lichen planus was classical seen in 13, eruptive in 10, linear in 8, hypertrophic in 4, actinic in 6, annular in 3 and follicular in 2. The difference was significant (P<0.05).
Conclusion: Serum uric acid level in patients with lichen planus was less as compared to healthy individuals.

Keywords: Lichen planus, Serum, Uric acid

Introduction

Lichen planus (LP) is a Subacute to chronic, inflammatory, papulosquamous disorder characterized by typical lesions. Small, shiny, flat-topped, polygonal, faintly erythematous to violaceous papules that may coalesce into plaques involve the skin, mucous membrane, and nail. LP can clinically present in various forms including classical, hypertrophic, actinic, annular, follicular, eruptive, and linear types. It affects all races and occurs usually from 30 to 70 years of Age. [1]

The disease affects 0.5-2% of the population. The clinical history confirms the relationship between OLP and oral cancer, although the degree of the risk involved is controversial. Therefore, OLP should be considered a precancerous lesion, emphasizing the importance of periodic follow-ups in all the patients. [2]

OLP was first described clinically by Wilson in 1869 as a chronic mucocutaneous disorder. Cutaneous lichen planus is recurrent, itchy and not contagious. [3] Concomitant disease involving the scalp, nails, esophageal mucosa, larynx and conjunctivae occurs much less frequently. In many patients, the onset of OLP is insidious, and patients are unaware of their oral condition. Some patients report a roughness of the lining of the mouth, sensitivity of the oral mucosa to hot or spicy foods, painful oral mucosa, red or white patches on the oral mucosa, or oral ulcerations. [4]

There are conflicting reports of association of uric acid levels among LP patients. Some found decreased levels of UA suggesting oxidative stress, while others failed to find any difference. [5] The present study was conducted to assess serum uric acid level in patients with lichen planus.

Materials & Methods

The present study was conducted in the department of Dermatology. It comprised of 46 cases (Group I) of lichen planus of both genders reported to the department. Equal number of

controls (Group II) was also included. The study was approved from the institutional ethical Committee. All were informed regarding the study and written consent was obtained.

Data such as name, age, gender etc. was recorded. Detailed clinical history followed by general physical examination, systemic examination and mucocutaneous examination was done in all. Five milliliter of venous blood sample was collected. Serum UA was assayed using Cora lab 3000 semiautoanalyser by uricase method. Results were subjected to statistical analysis. P value less than 0.05 was considered significant.

Results

Table 1: Distribution of patients

Total- 46		
Gender	**Males**	**Females**
Number	11	35

Table I shows that out of 46 patients, males were 11 and females were 35.

Table 2: Serum uric acid level in both groups

Groups	Mean value (mg %)	P value
Group I	3.51	0.05
Group II	3.98	

Table II shows that mean serum uric acid level in group I was 3.51 mg% and in group II was 3.98 mg%. The difference was significant ($P<0.05$).

Table 3: Type of lichen planus

Type	Number	P value
Classical	13	0.04
Eruptive	10	
Linear	8	
Hypertrophic	4	
Actinic	6	
Annular	3	
Follicular	2	

Table III, graph I shows that common type of lichen planus was classical seen in 13, eruptive in 10, linear in 8, hypertrophic in 4, actinic in 6, annular in 3 and follicular in 2. The difference was significant ($P<0.05$).

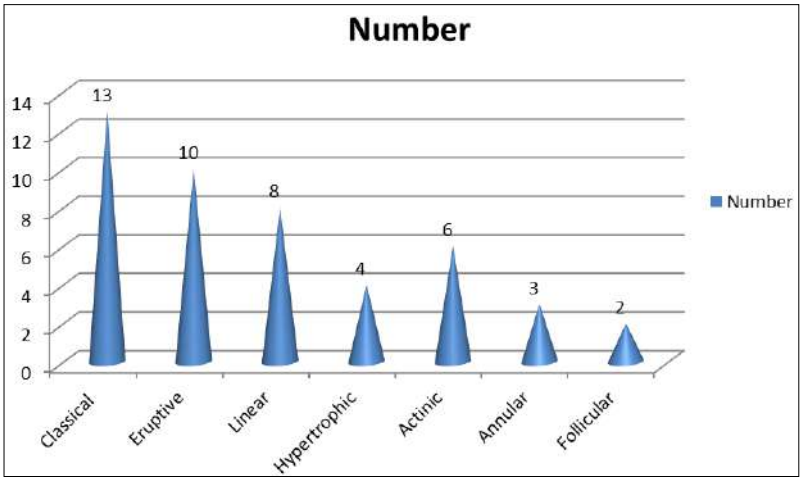

Fig 1: Type of lichen planus

Discussion

Although the etiology and pathogenesis of OLP are not fully understood, oral lichen planus has been as-associated with multiple disease processes and agents, such as viral and bacterial infections, autoimmune diseases, medications, vaccinations and dental restorative materials. The association between OLP and chronic liver disease is still controversial. [6]

The clinical evaluation of the oral lesions is based on the six clinical forms described by Andreason as reticular, papular, plaque, atrophic, erosive, and bullous. Mucosal lesions, which are multiple, generally have a symmetrical distribution, particularly on the mucosa of the cheeks, adjacent to molars, and on the mucosa of the tongue, less frequently on the mucosa of the lips (lichenous cheilitis) and on the gums (the atrophic and erosive forms localized on the gums manifest as a desquamative gingivitis), more rarely on the palate and floor of the mouth. [7] The present study was conducted to assess serum uric acid level in patients with lichen planus.

In this study, out of 46 patients, males were 11 and females were 35. The mean serum uric acid level in group I was 3.51 mg% and in group II was 3.98 mg%. Chakraborti *et al.* [8] stated that lichen planus (LP) is a common disorder whose etiopathogenesis is not clear. Recently, it has been suggested that increased reactive oxygen species (ROS) play

important roles in the underlying mechanism of LP. The aim of this study was to evaluate serum uric acid (UA) levels as a measure of the antioxidant defense status in LP patients. Methods: Serum UA levels were determined in 58 LP patients and 61 controls. Serum UA levels were significantly decreased in patients with respect to controls. Moreover, serum UA level was decreased according to increasing duration of disease.

We found that common type of lichen planus was classical seen in 13, eruptive in 10, linear in 8, hypertrophic in 4, actinic in 6, annular in 3 and follicular in 2. It is thought that UA contributes to >50% of the antioxidant capacity of blood. UA prevents peroxynitrite formation by neutralizing cellular superoxide and preventing its (superoxide) reaction with nitric oxide. [9] It is a scavenger of free radicals, such as NO2, which is formed from the breakdown of peroxynitrite and may assist in the removal of superoxide by preventing the degradation of superoxide dismutase, the enzyme that is responsible for clearing superoxide from the cell. UA is also very effective at preventing peroxynitrite from nitrating the tyrosine residues of proteins; thereby, preventing the inactivation of cellular enzymes and modification of the cytoskeleton. Some studies have revealed the antioxidant role of UA in other conditions. [10]

As free radical-induced damage is thought to be one of the important factors in the etiopathogenesis of LP, treatment guidelines should include optimal strengthening of antioxidant defense. Serum UA is a potent free radical scavenger, and it has been demonstrated, using two methodologically distinct assays, that systemic administration of UA increases ex vivo serum free radical scavenging capacity to a significantly greater extent than vitamin C, another important aqueous physiologic antioxidant. [11] Waring *et al*. [12] have suggested that regular follow-up of patients with OLP should be performed up to 3 times a year. OLP with dysplasia should be examined more frequently, every 2-3 months.

Conclusion

Authors found that serum uric level in patients with lichen planus was less as compared to healthy individuals.

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