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THE RELATION BETWEEN LOSS OF A FAMILY MEMBER AND ORAL LICHEN PLANUS IN IRAQI POPULATION

Ferial M. Abdulrida

Department Department of Oral Medicine, College of Dentistry, Baghdad University, Iraq
drfmahmoodabdulrida@gmail.com

Abstract background Oral lichen planus is common oral mucosal lesions with several predisposing factors, but with poorly identified etiology. Stressor factors could be one of etiological causes for eruption of the lesion and/or a predisposing factor for its appearance, aggravating the excited lesion. The aim of this study to evaluate certain circumstances that were passed on Iraqi population that may be related to elevated OLP incidence in Iraq. Material and method One hundred twenty-nine clinical charts for oral lichen planus patients were taken from oral pathology department college of dentistry university of Baghdad from a period 2009 to 2017. Results Fifty-eight patients only involved in the inclusion criteria of this study, the patients classified according to history associated eruption of the lesion into loss of one family member, trouble associated and both loss and trouble group .The mean age 48.37±12.2 ,the lesion most common in female than male 1.7:1,bilateral involvement of the lesion and mostly on buccal mucosa with slight higher of the red lesions over the reticular making elevated symptoms associated with the lesion mostly the burning sensation .About 65%of the patients presented within one to six months of eruption of the lesion. Conclusion The stressor events affect the age and the symptoms associated with eruption of oral lichen planus lesion.

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Keywords: *Tuna meat , Testosterone , men*

1. INTRODUCTION

Lichens are primitive plants composed of symbiotic algae and fungi, whereas planus mean “flat”. Erasmus Wilson was first described it in 1869 as lichen planus. The white striae were described by Wickham in 1895[1]. is a chronic autoimmune disease mediated by T lymphocytes involving the stratified squamous epithelial tissue.[2],[3]. The precise etiology of OLP is unknown, in most cases a multifactorial process is considered to be involved, with the participation of genetic, psychological and infectious factors. Some of these factors could act as causal agents, while others may trigger the process [4],[5],[6]. Stress plays a role in pathogenesis of OLP [7] studies show that acute and chronic psychological stress can induce changes in innate and adaptive immune responses which mediated via neuroendocrine mediators from the hypothalamic–pituitary–adrenal axis and the sympathetic–adrenal axis [8] stress is likely to play a secondary role in OLP pathogenesis [9]. The psychological factors are cause for the occurrence of OLP stress, anxiety and depression are some of these factors [10]. A variety of psychopathological problems affecting the patient family, and/or society [11] Patients experience stressful events before the onset of the Lichen planus life events like illness or death of dear one precedes or exacerbate lichen planus [12]. Several researchers have reported higher prevalence of mixed anxiety depression, social phobia, panic symptoms, obsessive thoughts, and dysthymia in patients with lichen planus [1,13]. Oral LP lesions exacerbation was associated with increased stressful events [7],[14]. Oral lichen planus (OLP) is a common presentation of lichen planus may occur alone or with other lesions [15]. Clinically OLP presents in several forms, which may appear alone or in combination: Lesions have been historically classified into six clinical forms: reticular, plaque form, atrophic, erosive, annular, and bullous [16], although others have limited the classification to the reticular and erosive types [17]. Reticular OLP is an incidental finding on oral examination because it asymptomatic and are bilateral and symmetric with thin, slightly raised white lines [18]. Erosive OLP present as areas of irregularly shaped ulcerations with whitish pseudo membranes in combination with areas of severely erythematous mucosa that mean Lesion contain both red and white elements [19]. Or atrophy with radiating white striae at the junction between involved and uninvolved mucosa mostly painful lesion [20]. OLP is often asymptomatic, or may be symptomatic which interferes with speaking, eating and swallowing ranging from burning sensations to severe pain [21],[22]. lesions are typically symmetric in distribution and can affect any area of the body cutaneous (i.e., scalp, hair, and nails) and mucosal(i.e., genital, esophageal, and conjunctival) sites, but, interestingly,

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the face is rarely affected [18]. LP affects all ages, but up to 95% of all cases occur in adults between the third and sixth decades of life [23]Oral lichen planus prevalence of 1–2% in general population [24] incidence of 0.02–0.22%.[25], mostly in females [26]. In men, the disease occurs before 40 years of age [27]. The most frequent lesion location is the cheek mucosa [28]. predilection sites are the buccal mucosa and tongue. Sometime the lesions present as desquamative gingivitis. [29]. The aim of this study to evaluate the effect of certain stressors conditions like family troubles and /or loss of one of its member or dear persons on incidence of the oral lichen planus in Iraq whether it's related to gender or age variation, or changes in type of lesion in population.

2. MATERIAL AND METHODS

2.1. Data Collections

Data collected from histopathological laboratory in college of dentistry Baghdad university from 2009to 2017. All patients conform to had oral lichen planus by histopathological reports and clinical data on their diagnostic charts all the patient's biopsies examined by the same oral pathologist according to modified OLP criteria of WHO 2003 [30]. The following data were obtained from the diagnostic charts gender, age, telephone number, address of patient, date of taking biopsy, clinical history of the disease which including site, size, the location of lesion if there any comorbidity during discovery of lesion or any associated mucocutaneous lesion with oral lesion

2.2. Sample Selections

Regarding the period mention About 129 patients were recall for further investigations and to sign the agreement for sharing in this study. History before the appearance of oral lesion was asked to all fallow up patients whether social, economic, psychological and/or personal troubles in their families or in patient's work and /or a history of shock from loss of one of the family members or dear persons precede the appearance of oral lichen planus lesion. Major stressful events [e.g., death of family member, divorce, job loss, major accident] were taken into account. In addition to co-adjuvant local factors such as smoking. All the patients applied to the ethical approval in college of dentistry. Exclusion criteria.

1. Patients with metaplastic changes within the lesion with time
2. Patients not responded to recall visit for fallow up.
3. Patients toke any psychiatric medications

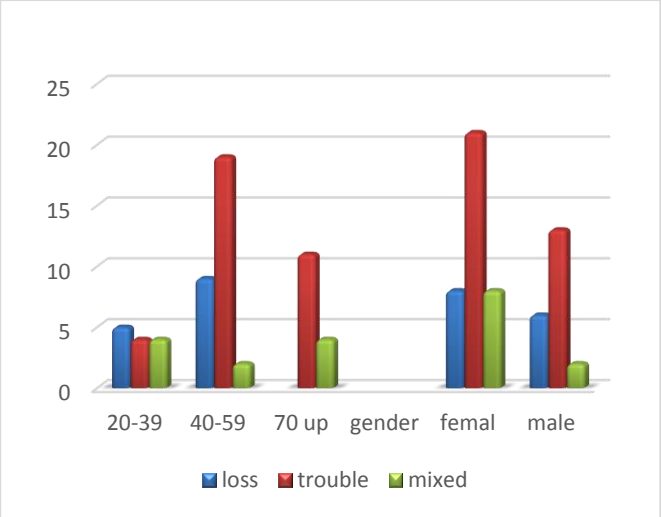
3. STATISTICAL ANALYSIS

Descriptive statistics used are frequency and percentage while inferential statistics are chi square and fisher exact. Level of significance is at 0.05. Statistical package for social science (SPSS-22), Chicago, Illinois ,USA.

3. RESULT

The selected samples were about 58 from 129 patients and they were classified into three groups according to information taken from the patients about the condition that related or accompanied to appearance of the lesion; into loss one of family member 14 (24 14%) patients, patients gave the history of trouble before appearance of lesion 34 (58.62%), and the third group had both loss of dear person and trouble history 10 (17.24%) as shown in Table (1) Appendix (1).

Table 1 *age groups and gender in 3 patients groups*



Age And Gender The Sample

age ranged from 26 to 73years with mean 48.37 ±SD12.26 and were categorized into three age groups (20-39); (40-59) and (60-79) the most common age group among the patients in this study was(4o-59) about 52%of all patients fallowed by third age group (60-79) was about 26%, lowest number of patients lied in the first age group (20-39) which was about 22%.as shown in figure (1) There was ahigh significant relationship between age group and patients classification group according to stressor events were told by patients which was about (0.005) as shown in Table no.1 . The female /male ratio included in this study. Was about 1.76:1 about 37 (**63.79%)** female and 21 (**36.21%)** males in patients' groups as appeared in figure (1). except the first group loss one of family member which showed a slight difference only between female /male gender ,8 females and 6 males as shown in this group as in table no.1

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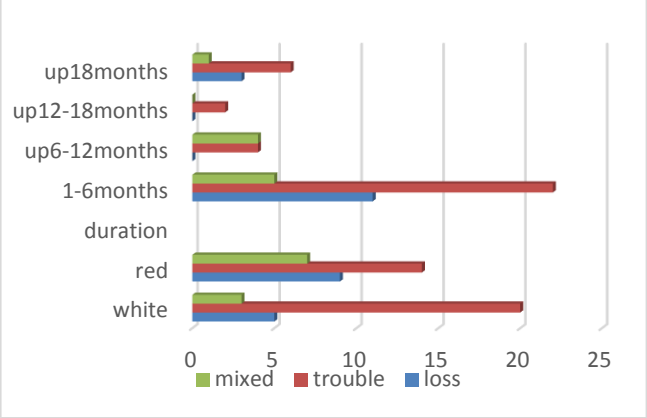


Figure (2) *the duration and types of lesions in 3 groups*

The duration of lesion

The duration of disease was divided into 4 periods from (0-6 months), (up to 6-12months), (up to 12-18 months) and (up to 18 months). most of the patients in this study gave the first duration time for their lesion eruption about 38 subjects from the all 58 patients had duration equal or less than 6months for discovering their lesions which was about (65%) of patients. And about 22 subjects of this duration time were giving a history of trouble before eruption of lesion (58%) in contrast of (29%) of subjects were had loss one dear person history before eruption of lesion as appear in figure (2) on other hand the majority of this duration time belong to the second age group of patients (40-59).

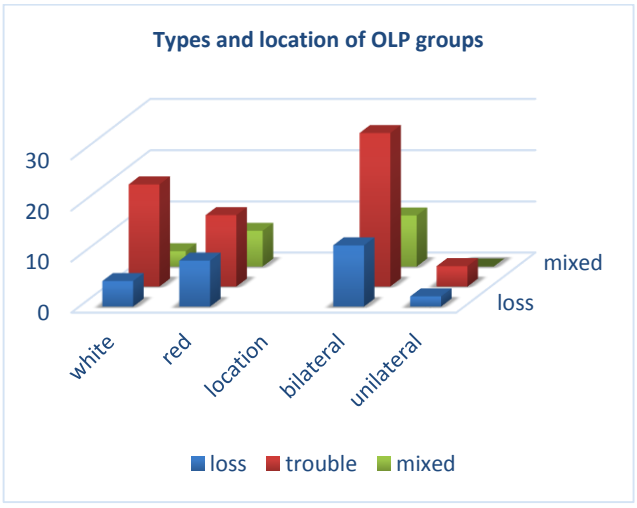
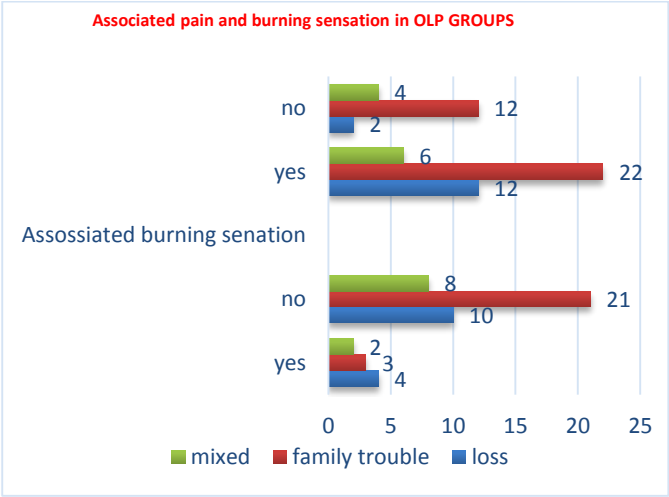


Figure (3) *the site and location of olp groups*

The Co-Morbidity

There were about (15.5%) of the sample complain from diabetes mulitas, (9) patients from all sample had DM (5) of them within loss one of dear person group (2) patients in both trouble group and mixed group, other comorbidity associated with the oral lesion was hypertension about (17.2%) of all sample complain from hypertension about (10) patients ;(5) of them on trouble group;(3) with loss group and (2) in mixed. there was (1) smoker, (2) had hypothyroidism and (2) had GIT disease.as in table no.1



Figure(4) *associated pain and burning sensation in olp groups*

Associated Pain And Symptoms

The main complaint of the patients was pain which was about (15.5%) only (9) patients suffer ed from pain at time of presentation and they distributed as (4) with in loss group ;(3) in trouble group and (2) in mixed one. So, the loss group were the highest group of OLP groups complaining from pain during first presentation of the disease while burning sensation which was appear higher than that of pain about (69%) of all patients (40) subjects had burning symptoms most of them (22) associated with trouble group (12) with in loss group and (6) in mixed group.as the figure (4) shown. There was ahigh significant correlation between burning sensation and the type of lesions in trouble group of OLP groups as there was 59% of patients complain from burning sensation showed red type of lesions against 41% had same complaint but represent white lesions as shown in Table no. (2).

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Table (2): *The relation between burning sensation and type of lesion in different OLP groups.*

Groups			Burning						Total	
			no		yes					
			N.	%	N.	%	Fisher exact	P value	N.	%
Family loss	Lesion	Red	1	50.00	8	66.67	0.207	1.00 NS	9	64.29
		White	1	50.00	4	33.33			5	35.71
	Total		2	100.00	12	100.00			14	100.00
Trouble	Lesion	Red	1	8.33	13	59.09	8.259	**0.009 Sig.**	14	41.18
		White	11	91.67	9	40.91			20	58.82
	Total		12	100.00	22	100.00			34	100.00
Mixed	Lesion	Red	2	50.00	5	83.33	1.270	0.500 NS	7	70.00
		White	2	50.00	1	16.67			3	30.00
	Total		4	100.00	6	100.00			10	100.00

4. DISCUSSION

This study focused on the effect of stressor events on the eruption of oral lichen planus in groups of Iraqi patients as the unstable circumstances that passed on Iraqi population in previous years had an great effect on the personality and desire of individual how in contact with these events, the disease as was founded in previous study consider as a common disease in our country [31,32]. The prevalence of the lichen planus in the population worldwide is between (1–1.5%), with predominance among females in the fifth and sixth decades of life [33]. This co-inside to the finding of this study results and other Iraqi study about lichen planus as it was most commonly having its onset during the fifth or sixth decadal [31] or co-inside with study done by[34]. in fourth to fifth decay of life as it was shown by this study and the previous one [32]. Lichen. planus has not had a racial predilection; however, certain populations seem to have a higher incidence of the disease Than others [35], other studies showed a Varying prevalence rate of OLP have been reported indifferent parts of the world [6], the current study showed a slight variation in same population with time as this clear if make a comprise between different studies at same population regarding the mean age of the disease incidence or male /female ratio for example if we toke the same population and same researcher but different time of collection data founded that the mean age of the current study is slightly higher than the previous retrospective one as it was 48.37 while in past study was 46.6 years [32], the same true for male /female ratio as appeared as 1:1.76 while the previous ratio was 1:1.68.this also varied with adjacent countries as the mean age was higher than our two findings in study was done in Turkey [30] ;as showed the higher female incidence than male by more than twice and high mean age about 50 years the findings of past and current studies co-inside with [21,36,37] and also disagreed with reveres observation in Indian study as it was show higher prevalence rate of the disease in male than females (M:F= 1.61:1)and very low mean age of incidence 36.9 years [38]. A history of stressful events like loss of dear persons; troubles or mixed events was given from (45%) of patients in this study This percentage is lower than that found by Burkhart.1997 which was (51.4%) of the patient had stress events during appearance of oral lichen planus [39] .This was also confirmed by the findings reported by Andreasen and Shklar [40,41]; other studies also found that old stressful events affect the appearances of oral lichen planus [42]. The lesion was classified into white and red lesions according to some limited classification done by Neville (2009) [17].and they were approximately equal with slight elevated of red over white (52%red,48%white) this agreed with Egyptian study that showed (59.3%) of patients with red erosive lesions [6]. and unlike worldwide studies that found prevalence of the white forms of OLP in (88.5%) [43]; and about (62%) [44]; (77%) white keratotic [45]. The distribution of the red and white lesions in the study groups were according to the following: more red lesions than white in the loss group and the mixed one in about 2 to 1 while white lesion more than red in the trouble group by about 1.5 time this could be agreed with study done by Lundquist in (2006) [29] ;who reported

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elevated scores regarding depression, anxiety and stress in patients with erosive oral and genital lichen planus, or the condition could be explained in revers way that the impairment in oral and/or genital function due to appearance of erosive type could lead to stress and depression ,but this type of explanation was not co -inside with the history taken from the patients as they could recognized that the sudden loss of dear person precede the appearance of their lesions. Such a history taken by the majority of previous studies which compared between patients with oral lichen planus and control persons Most of the patients with OLP had two stressful events in the previous year, whereas control subjects had only one stressful event.[29]. The Location and site of lesion mostly occurred bilaterally on the buccal mucosa in about (90%)of cases bilaterally and (75%) of cases on the buccal mucosa which co inside with previous study [36,37,46] either only one site of oral cavity affected by lesion or associated with other sites like .(9%)occur on tongue and (4%)on lip and (2%)on palate with buccal mucosa, this finding co-inside in some points and differ in others with previous studies were done by Allan 1996;and Saraceno,2013 as they found that the clinical lesion of oral lichen planus were mostly appear on posterior part of buccal mucosa in about (90%) of cases followed by tongue (20%) then with less percentage of alveolar ridge-gingiva and the lip [47],[48]. Most of the patients' stressors included in this study where previously recorded as they recognized that the serious illness /death of one family member or close person were the main stressors that recorded before eruption of the lesions [49]., also the stress at working place, and stress due to interpersonal and family relationships.[14]; this could be explained through that the stressors have multiple effects on the body autonomic, nervous system, hormone levels, and brain activity. Perception and reaction to stressors are mediated by psychological factors [50],[51]. These factors can either trigger onset of the disease or cause existing disease to worsen [6]. variation in individual responses to stressor is great, the people differ in their personality and experience view to which event is consider a stressful event. Stressor triggers the psychological stress which is consider as a prevalent aspect of life [51]. other study showed even mild, transient stress can result in immune dysregulation at all stages of life. Educe a decline in the ability of white blood cells (lymphocytes) to perform their key functions [52]. others discussed the condition Regarding the theory of the antigens responsible for development of OLP, an increased keratinocyte expression of heat shock proteins (HSP) was reported, these proteins were autoantigens and showed to be induced by certain agents like infections or drugs [48]. There was no significant relation between duration of the disease and type of lesion or with gender distribution appear in this study this co-inside with other study done previously showed that the duration of disease did not seem to be a factor, and no associated causative factors were evident [53]. The study sample showed symptoms of burning sensation which was about (69%) of their complaint and the highest value had been seen in the loss group (85.7%) followed by the trouble group which was (64.7%) and (60%) in the mixed group also there was ahigh significant relationship between burning sensation and type of lesion appear clearly in the trouble group as there was (59%) of the patients within this group were seeking help for burning sensation represented with red lesion while (41%) of this patients group had no symptoms represented with white lesions as shown in (Table -2).this finding agreed the study done by Saraceno 2013 that the white reticular form of OLP is often asymptomatic, the red atrophic-erosive form can cause symptoms ranging from burning sensation to severe pain, interfering with speaking, eating, and swallowing [48]. In contrast to burning low percentage of the study sample complain from pain ranging (8%) in the trouble group to the highest percentage found (28.5%) in the loss group, all the complaint patients in the loss group presented with red lesions this could improve the truth that "the red lesions produce much more clinical problems than the white ones" and agreed in some way with the symptoms was reported by Vladimíra Radochová,2014 about (63.7%) sustained pain and (3.8%) severe pain [54]. As the Reticular OLP is often asymptomatic and frequently discovered through an incidental examination. mostly appear as thin, slightly raised white lines or papules that form a lace-like pattern. While the red lesions are typically painful and subject to irritation by dental hygiene products or foods. present as large areas of irregularly shaped ulcerations or as severely erythematous mucosa with radiating white striae [18]. Oral lichen planus (OLP) is a common presentation of lichen planus that can occur alone, or concomitantly with skin lesions. [15]. or genital lesion mostly vulva and vagina were also affected in approximately 25% of patients with oral lichen planus; and the nails involvement [55], the percentage found this study for each skin and genital involvement were equal which about 7% which was Avery low percentage found in previous study by Richard and slightly little pit higher than the retrospective study done 2021 which was 3.28% of skin lesions and 3.94%genital lesions the reason beyond lower percentage of our population if compare to other study for skin lesions was that lesions mostly precede the oral one and with continuous remission of skin lesion so may be not found with oral lesion and miss diagnosed as time of recording the patient clinical chart [56] ,the same for genital lesion as this made the patient fell social difficulty to tell about his/her genital lesions to dentist during examination of the oral cavity made this type of information miss recorded [57]. With the co-morbidity associated with oral lichen planus patients were hypertension and diabetes militias most commonly founded in this study sample about 17.25%hypertension and 15.5%diabetes this finding was higher than that study done by Zheng 2012 which

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found a hyper tension about 10% and diabetes 1.4%very low incidence of systemic diseases when compared to their incidence in general population [58].and slightly compatible with Egypt study by *Basma Mostafa* , 2015) showed 12.5% of sample had history of hypertension[6]. There was no correlation of OLP with diabetes mellitus has been suggested [59]. This indicates systemic diseases may not have a role on the pathogenesis of OLP [60]. the incidence of the systemic diseases in OLP sample was not higher than expected if compared to its incidence in general population [61]. This study showed much fewer incidence of these diseases than other studies [21;37;58 ;60;62].as the prevalence of hyper tension and diabetes in Iraq were high in general population (Poster Word WHO, 2013) [63]and by Al Douri, 2015 [64].

5. Conclusion

Oral lichen planus eruption could be multifactorial process like genetic, psychological and infectious agents some acts as a causal and other as a trigger. Patients with oral lichen planus should be evaluated psychologically beside oral therapy needed.

Table 3. The relation between age groups, gender, duration, types and locations of lesions, associated lesions and co-morbidity, pain associated and burning sensation in different groups of patients

Age (years)	Patients Groups								Total	
	Family loss		Trouble		Mixed					
	N.	%	N.	%	N.	%	Fisher exact	P value	N.	%
20-39	5	35.71	4	11.76	4	40	13.105	0.005 Sig.	13	22.42
40-59	9	64.29	19	55.88	2	20			30	51.72
60-79	0	0	11	32.35	4	40			15	25.86
Total	14	24.14	34	58.62	10	17.24			58	100
gender	N.	%	N.	%	N.	%	Chi square	P value	N.	%
Male	6	42.86	13	38.24	2	20	1.466	0.481 NS	21	36.21
Female	8	57.14	21	61.76	8	80			37	63.79
Duration	N.	%	N.	%	N.	%	Fisher exact	P value	N.	%
1-6m	11	78.57	22	64.71	5	50	1.194	0.699 NS	38	65.52
7-12m	0	0	4	11.76	4	40			8	13.79
13-18	0	0	2	5.88	0	0			2	3.45
>18m	3	21.43	6	17.65	1	10			10	17.24
lesion	N.	%	N.	%	N.	%	Chi square	P value	N.	%
Red	9	64.29	14	41.18	7	70	3.737	0.154 NS	30	51.72
White	5	35.71	20	58.82	3	30			28	48.28

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LOCTION	N.	%	N.	%	N.	%	Fisher exact	P value	N.	%
bilateral	12	85.71	30	88.24	10	100	1.194	0.699 NS	52	89.66
Unilateral	2	14.29	4	11.76	0	0			6	10.34
ASSOCIATED LESIONS	N.	%	N.	%	N.	%	Fisher exact	P value	N.	%
Free	10	71.43	30	88.24	7	70			47	81.03
Dry mouth	0	0	0	0	1	10			1	1.72
Genital	1	7.14	2	5.88	1	10	11.253	0.215 NS	4	6.9
nail	0	0	1	2.94	0	0			1	1.72
numbness	1	7.14	0	0	0	0			1	1.72
Skin	2	14.29	1	2.94	1	10			4	6.9
Co-morbidity	N.	%	N.	%	N.	%	Fisher exact	P value	N.	%
free	5	35.72	24	70.59	5	50			34	58.63
DM	5	35.72	2	5.88	2	20	10.17	0.081 NS	9	15.5
HT	3	21.42	5	14.71	2	20			10	17.25
others	1	7.14	3	8.82	1	10			5	8.62
Total	14	100	34	100	10	100			58	100
pain	N.	%	N.	%	N.	%	Fisher exact	P value	N.	%
no	10	71.43	31	91.18	8	80	3.333	0.21	49	84.48
yes	4	28.57	3	8.82	2	20			9	15.52
Burning	N.	%	N.	%	N.	%	Fisher exact	P value	N.	%
no	2	14.29	12	35.29	4	40	2.52	0.313 NS	18	31.03
yes	12	85.71	22	64.71	6	60			40	68.97

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