Accepted Article

Evaluation of clinicopathological and treatment characteristics of 80 patients with acquired perforating dermatosis

Muge Gore Karaali[1], MD; Duygu Erdil[2], MD; Vefa Aslı Erdemir[3], Associated Professor; Mehmet Salih Gurel[3], Professor; Ayse Esra Koku Aksu[2], Associated Professor; Cem Leblebici[4], Associated Professor

[1] Erzincan Binali Yıldırım University, Mengücek Gazi Training and Research Hospital, Department of Dermatology, Erzincan, Turkey

[2]University of Health Science (HSU) Istanbul Training and Research Hospital, Department of Dermatology, Istanbul,Turkey

[3]Medeniyet University, Göztepe Training and Research Hospital, Department of Dermatology, Istanbul, Turkey

[4] University of Health Science (HSU) Istanbul Training and Research Hospital, Department of Pathology, Istanbul, Turkey

Corresponding author: Muge Gore Karaali, MD, Erzincan Binali Yıldırım University, Mengücek Gazi Training and Research Hospital, Department of Dermatology, Erzincan, Turkey

Phone number: +9005303093328

E-mail: mugegore@hotmail.com

Running title: **Acquired Perforating Dermatosis**

Acknowledgments: None

Authorship Contributions:

This article has been accepted for publication and undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process which may lead to differences between this version and the Version of Record. Please cite this article as doi: 10.1111/dth.14465

This article is protected by copyright. All rights reserved.

Accepted Article

Concept: M.G.K, D.E , Design: M.G.K, D.E, V.A.E, A.E.K.A., Data Collection or Processing: M.G.K Analysis or Interpretation: M.G.K, D.E, V.A.E, A.E.K.A, M.S.G C.L; Literature Search: M.G.K, D.E, Writing: M.G.K, D.E, V.A.E, A.E.K.A, M.S.G, C.L

Conflict of Interest: No conflict of interest was declared by the authors.

Financial Disclosure: The authors declared that this study received no financial support.

Data availability: Data available on request due to privacy/ethical restrictions

This article is protected by copyright. All rights reserved.

Accepted Article

Evaluation of clinicopathological and treatment characteristics of 80 patients with acquired perforating dermatosis

Abstract

Background: Acquired perforating dermatosis (APD) is a group of a rare dermatological disorder characterized by elimination of dermal connective tissue through epidermis. We aimed to evaluate the characteristics of patients diagnosed with APD and to determine the differences in comorbidities according to subtypes of APD

Methods: A retrospective, observational, cross-sectional study was designed. Patients diagnosed with APD between January 2008 and January 2019 were reviewed.

Results: Eighty patients were included in the study. 61,2% (n = 49) of the patients were female and 38,8% (n = 31) were male with a mean age of 58,4 ± 12,5 years. 82,5% (n = 66) of the patients were diagnosed with reactive perforating collagenosis (RPC) and 17,5% (n = 14) of perforating folliculitis (PF). The most common concomitant disease was diabetes mellitus (82,5%). 5,0% of the patients had

This article is protected by copyright. All rights reserved.

Accepted Article

malignancy. The comorbidity rate in RPC group was higher than PF ($p<0,05$). Topical steroid was the most frequently (90,0%) used treatment. Complete response was obtained 55,0% of patients. Exitus was observed in 23,8% (n = 19) of patients in a mean 17,6 ± 25,7 months follow-up period.

Conclusions: APD may be associated with many diseases. Comorbidities are more frequent in RPC group. This situation warns us to evaluate patients with RPC in more detail for underlying diseases. High mortality rate related to the underlying systemic diseases suggests being careful in terms of mortality in patients diagnosed with APD.

Key words: acquired perforating dermatosis, transepidermal elimination, diabetes mellitus, malignancy, mortality

Evaluation of clinicopathological and treatment characteristics of 80 patients with acquired perforating dermatosis

Introduction:

Acquired perforating dermatosis (APD) is a group of a rare dermatological disorder characterized by elimination of keratin, collagen and elastic fibers through epidermis. According to the types of epidermal elimination material, APD are entitled as acquired reactive perforating collagenosis (RPC), acquired perforating folliculitis (PF), and acquired elastosis perforans serpiginosa (EPS). [1] It's often accompanied by systemic diseases such as diabetes mellitus (DM), chronic kidney disease (CKD), however it can be also seen with many different diseases. [2-5]

The aetiology and pathogenesis of the disease is not known precisely. Since there are a few studies with a limited number of patients in the literature, our study aimed to

This article is protected by copyright. All rights reserved.

Accepted Article

evaluate clinicopathological and treatment characteristics of 80 patients diagnosed with APD. In addition, our other aim in this study was to determine the differences in comorbidities according to subtypes of APD and the prognosis of the patients.

Material and Methods:

The study was designed as a retrospective, observational, cross-sectional study. Ninety-one patients clinically and histopathologically diagnosed with APD between January 2008 and January 2019 were reviewed. Patients over 18 years of age who were diagnosed clinicopathologically with APD were included in the study and patients with suspicious diagnoses and patients who had incomplete information about demographic, clinical, or laboratory findings were excluded from the study. Eighty patients were included in the study.

The study was approved by the Local Ethics Committee. Written informed consent was obtained from the patients.The patient files and photographs were retrospectively reviewed through medical records. The following characteristics were recorded in a database specifically designed for the study.

Demographic characteristics: Age, sex, duration to diagnosis (months)

Clinical characteristics: Type of APD, location of the skin lesions, Koebner phenomenon, associated symptom and comorbidities.

Histopathological characteristics: Epidermal loss, basophilic debris, transepidermal collagen elimination

Treatment and follow-up characteristics: Type of treatment (topical therapy, systemic therapy, phototherapy), response to treatment (complete response, partial

This article is protected by copyright. All rights reserved.

response, no response) and duration of follow-up (months). Treatment outcome was entitled as complete response if there were no residual lesions or symptoms, partial response if there was an improvement but persistent lesions and/or pruritus, and no response if there was no improvement.

Statistical Analysis: Data analyses were performed with statistical software Statistical Package for the Social Sciences 22.0 (SPSS 22.0). Comparisons between two independent groups were made by Student's t-test and the Mann-Whitney U test. Ratios of categorical variables between groups were tested by chi-square test. When it was not convenient, Fisher's exact test was applied. The distribution of variables was evaluated with the Kolmogorov Smirnov Test. A p value of <0,05 was considered statistically significant.

Results:

Demographic, clinical and histopathological characteristics:

Eighty patients included in the study. Patient demographic, clinical and histopathological characteristics are shown in Table 1. 61,2% (n = 49) of the patients were female and 38,8% (n = 31) were male. Their mean age at diagnosis was 58,4 ± 12,5 years. None of them had a family history of APD. 82,5% (n = 66) of the patients were diagnosed with RPC and 17,5% (n = 14) of PF. There was no patient diagnosed with EPS.

Lesions were located on lower extremity in 80,0% (n = 64), on trunk in 76,2% (n = 61), on upper extremity in 62,5% (n = 50), on head and neck in 5,0% (n = 4) of the

Accepted Article

This article is protected by copyright. All rights reserved.

Accepted Article

patients. Koebner phenomenon was observed in 43,8% (n=35) of the patients. All patients had pruritus, none of them had pain.

Histopathologically epidermal loss was observed 45,0%, basophilic debris 96,3%, transepidermal collagen elimination 81,3% of the patients. 19,7% of the patients neither collagen nor elastin elimination was identified.

An underlying systemic disease was identified in 88,8% of the patients. Associated systemic disorders are summarized in Table 2. In 3 patients, concomitant disease was detected after clinicopathological diagnosis.

The most common concomitant disease was type 2 DM (82,5% n = 66). 59,1% of patients with DM had been on insulin treatment. The mean glycated hemoglobin (Hba1c) level of these patients was 8,76%. 28,8% of all patients were followed by ophthalmology due to diabetic retinopathy. CKD was the second most concomitant disease (35,0%, n = 28). 53,6% (n = 15) of CKD patients were on hemodialysis treatment. 5,0% of the patients had solid organ malignancy (breast (n=2), ovarian (n=1), hepatocellular carcinoma (n=1)). The other concomitant diseases were hepatitis B and C infection, vitiligo, psoriasis and hypothyroidism and scabies.

When patients with RPC and PF were compared, comorbidity was present in 71.4% of patients with PF and in 92.4% of patients with RPK, the comorbidity rate in RPC group was statistically higher ($p<0,05$). There was no significant difference between both groups regarding the other parameters.The comparison of RPC and PF group is shown in Table 3.

This article is protected by copyright. All rights reserved.

Accepted Article

Treatment and follow-up characteristics:

In terms of treatment characteristics, all patients (100%) used antihistamines and topical emollient. Topical steroid was the most frequently (90,0%, n=72) used treatment, the rest of the patients was treated with topical steroid with narrowband UVB (nbUVB) theraphy 10,0% (n=8). Patient treatment characteristics are shown in Table 1. Regarding treatment responses, 55,0% (n=44) of patients had complete, 42,5% (n=34) partial, and 2,5% (n=2) no response. Complete response was obtained in 75% (n=6) of the patients who were treated with topical steroid with narrowband UVB (nbUVB) theraphy.

The mean follow-up time was 17,6 ± 25,7 months. Exitus was observed in 23,8% (n = 19) of patients due to underlying systemic diseases.

Discussion:

APD is a rare dermatological disease frequently seen with systemic diseases. It often appears in the 5th-6th decades with male predominance and may present with hyperkeratotic papules and nodules, erythematous, keratotic plugged, umbilicated papules and erythematous pustules. [1, 3, 5] In our study, although the mean age of the patients was compatible with the literature, the disease was 1.6 times more common in women. García-Malinis et al. also reported that the disease is more common in women. [2] In the largest series with fifty-seven patients the female to male ratio was reported approximately equally. [4] In our study the lesions were frequently located on lower extremity similar to the literature. [1, 2, 4] But unusual presentations such as face and scalp were also observed.

This article is protected by copyright. All rights reserved.

Accepted Article

Pruritus was the most common and only symptom in our patients. Pruritus is the main symptom reported in this disease and it had been published that 61-100% of the patients had pruritus. [2-5] However, it has been reported in some publications that pain may also be seen, and , there was no patient with pain in our study. [3] Koebner positivity suggests that trauma may play a role in the aetiology and pathogenesis of the disease. Superficial microtrauma to skin because of pruritus and subsequent scratching in some patients may be one of the main triggers. [3] In our study, koebner phenomenon was observed in 43,8% of the patients. In the literature, this rate is reported between 31-56% of the patients.[3, 5] According to the types of epidermal elimination material, APD may be seen as RPC, PF or EPS. [1]. In a study had been reported that lower extremity lesions were more frequent and accompanying pruritus more often in RPC. [2]

As we mentioned before, APD often occurs in people with systemic diseases. Therefore, when APD is detected, it is important to question and evaluate patients in terms of potential accompanying diseases. In our study only 10,0% of the patients with APD was otherwise healthy people and this rate was similar with the literature findings. [2] DM and CKD are the most frequent comorbidities in APD patients, however it can be seen with pregnancy, disseminated histoplasmosis, malignancies, acquired immunodeficiency syndrome, scabies, dermatomyositis, Hodgkin's disease, Behçet disease, hypothyroidism, gastroenterological, rheumatological, neurological, cardiovascular, psychiatric diseases and hepatitis infection. [2, 4-15] In some of our patients, concomitant diseases were detected after the clinicopathological diagnosis of

This article is protected by copyright. All rights reserved.

Accepted Article

APD. This situation showed us that the dermatologists should investigate the underlying diseases in patients diagnosed with APD.

APD has various subgroups and we wonder if there is a difference between these subgroups in terms of accompanying diseases. When the differences in comorbidities according to subtypes of APD examined, it was seen that comorbidity rate was significantly more frequent in patients with RPC in our study. This situation warns us to evaluate patients with RPC in more detail for underlying diseases. However, no significant difference was observed between the two groups in terms of the variety of underlying diseases.

Garcia Malinis et al. reported that hypertension and venous insufficiency were the most common disorders with APD although DM was rarely reported. [2] Besides DM and CKD Miguel Garrido et al. also observed psychiatric, infectious diseases and malignancies at a considerable frequency. [4] Saray et al. determined CKD as the most common systemic disease in patients with APD. They reported that all patients with CKD on kidney replacement therapy and the lesions occurred after starting of kidney replacement therapy in all patients. [3] However Miguel Garrido et al. reported that 10,5% of the CKD patients were on dialysis treatment. [4] The most common systemic disease in our study was type 2 DM (82,5%), and 53,6% of patients with CKD were on kidney replacement therapy. Approximately 60% of patients with DM had been on insulin treatment, which was over the frequency reported in the literature. [4] Morton et al. reported a higher number of patients on insulin therapy, but this result may have been caused by the patient population, because all patients were suffering CKD. [16]

This article is protected by copyright. All rights reserved.

Accepted Article

The association of APD with malignancy has been reported both in patients with hematological malignancies and solid organ malignancies. [4, 7, 13, 15] Compared to the study which showed concomitant malignancy was present in about 16% of the patients, malignancy rate was 5,0% in our study. [4] Breast carcinoma (n=2), ovarian carcinoma (n=1), hepatocellular carcinoma (n=1) were the malignancies determined in our study population. The comorbidity rate in RPC group was statistically higher ($p<0,05$) but there was no significant difference between RPC and PF groups in terms of malignancy. Breast, ovarian and hepatocellular carcinoma has been reported rarely in literature. [17-19] EPS as a paraneoplastic phenomenon in a patient with ovarian cancer has been reported. [18] In our study, ovarian cancer was seen in a patient diagnosed with RPC, but this patient had been also suffering DM. It may be difficult to make any conclusions about associations of APD with malignancy, since the case numbers in our study were so low but an occult neoplasm should be kept in mind in the presence of constitutional symptoms such as weight loss, night sweats, particularly in the absence of other systemic diseases in patients with APD

The aetiology and pathogenesis of the disease is not known precisely. But microtrauma due to pruritus and scratching, microangiopathy, deposition of substances that cannot be removed with kidney replacement therapy are the possible theories. [20-22] The receptor for advanced glycation end products, a transmembrane receptor, might be involved in the pathogenesis of APD and Akoglu et al. observed an overexpression of this receptor in lesional samples of patients with APD. [23] Diabetic retinopathy is a kind of microangiopathy. Some authors believe that microangiopathy

This article is protected by copyright. All rights reserved.

Accepted Article

plays a role in the pathogenesis of the disease. It is thought that microangiopathy may cause necrosis after microtrauma following scratching and as a result of hypoxia due to vasculopathy necrotic material (collagen etc.) may be eliminated through the epidermis. [16, 21, 24] Periodic acid-Schiff (PAS) positive wall thickness increase, which is an indicator of angiopathy, has been reported by some authors. [1, 3, 5, 21, 24] But PAS positivity had not been observed in our study. 28,8% of our patients were followed by ophthalmology due to diabetic retinopathy. Saray et al. reported retinopathy in 81.8% of their patients. [3] In our study, the retinopathy rate is 28.8%. This low frequency may be due to the retrospective design of the study and the lack of routine ophtalmological examination for all patients. Besides, the absence of any significant difference between the group with and without retinopathy in our study suggests that there is no parameter to predict retinopathy in patients with APD. Consequently all APD patients with DM should be carefully evaluated for DM complications.

The management of APD is challenging and there are no treatment guidelines for APD. Topical steroids with antihistamines, systemic steroids, narrowband UVB (nbUVB), intralesional steroids and doxycycline, acitretin, allopurinol, and psoralen plus UVA (PUVA) therapy are the treatment options and therapy of underlying systemic diseases should always be considered. [4] Antihistamines, topical steroids and emollient were the most frequently used therapies in our study.

We have limited information on mortality in APD. Miguel Garrido et al. reported that 8,8% of their patients died within 6 months following the diagnosis of APD. [4] Akoglu et al. reported 12,0% mortality rate. [5] In our study, we observed that 23,8% of

This article is protected by copyright. All rights reserved.

Accepted Article

patients died due to complications related to their systemic disorders. This high mortality rate may be due to our long follow-up period. But this high rate suggests that we should be careful in terms of mortality in this patient group.

The main limitation in our study is its retrospective design and another limitation may be the absence of patients with elastosis perforans serpiginoza. There has been a limited number of studies on APD in the literature. However, to the best of our knowledge, this is the largest series of APD in the literature.

In conclusion, APD is a rare dermatological disease that often accompanies systemic diseases. It is not only related to DM or CKD, many other diseases should be considered including malignancy. Comorbidities are more frequent in the RPC group. High mortality rate in our study suggests that we should be careful in terms of mortality related to their underlying systemic diseases in patients diagnosed with APD.

References:

1. Rapini RP, Herbert AA, Drucker CR. Acquired perforating dermatosis. Evidence for combined transepidermal elimination of both collagen and elastic fibers. *Arch Dermatol.* 1989;125(8):1074-8.
2. Garcia-Malinis AJ, Del Valle Sanchez E, Sanchez-Salas MP, et al. Acquired perforating dermatosis: clinicopathological study of 31 cases, emphasizing pathogenesis and treatment. *J Eur Acad Dermatol Venereol*. 2017;31(10):1757-63.
3. Saray Y, Seckin D, Bilezikci B. Acquired perforating dermatosis: clinicopathological features in twenty-two cases. *J Eur Acad Dermatol Venereol.* 2006;20(6):679-88.
4. Garrido PM, Queiros C, Borges-Costa J, et al.Acquired perforating dermatosis: clinicopathologic study of a 10-year period at a tertiary teaching hospital. *Int J Dermatol.* 2020;59(4):445-50.
5. Akoglu G, Emre S, Sungu N, et al. Clinicopathological features of 25 patients with acquired perforating dermatosis. *Eur J Dermatol.* 2013;23(6):864-71.

This article is protected by copyright. All rights reserved.

Accepted Article

6. Choudhary N, Aggarwal I, Dutta D, et al. Acquired perforating dermatosis and Addison's disease due to disseminated histoplasmosis: Presentation and clinical outcomes. *Dermatoendocrinol.* 2013;5(2):305-8.
7. Eigentler TK, Metzler G, Brossart P, et al. Acquired perforating collagenosis in Hodgkin's disease. *J Am Acad Dermatol.* 2005;52(5):922.
8. El-Fidawi G, Kurban M, Ghani Kibbi A, et al. Acquired perforating disorder reminiscent of elastosis perforans serpiginosa in a patient with Behcet disease. *J Cutan Pathol.* 2013;40(4):434-6.
9. Eriyagama S, Wee JS, Ho B, et al. Acquired reactive perforating collagenosis associated with urticarial vasculitis in pregnancy. *Clin Exp Dermatol*. 2014;39(1):81-3.
10. Healy R, Cerio R, Hollingsworth A, et al. Acquired perforating dermatosis associated with pregnancy. *Clin Exp Dermatol*. 2010;35(6):621-3.
11. Kassardjian M, Frederickson J, Griffith J, et al. Elastosis perforans serpiginosa in association with scabies mite. *J Clin Aesthet Dermatol.* 2013;6(10):36-40.
12. Kikuchi N, Ohtsuka M, Yamamoto T. Acquired reactive perforating collagenosis: a rare association with dermatomyositis. *Acta Derm Venereol.* 2013;93(6):735-6.
13. Rivera-Rodriguez A, Prieto-Torres L, Felipo-Berlanga F, et al. Acquired reactive perforating collagenosis associated with Hodgkin disease. *Clin Exp Dermatol.* 2017;42(8):934-36.
14. Rosenstein R, Martires K, Christman M, et al. Dermatomyositis, clinically presenting with cutaneous ulcers, with histopathologic evidence of perforating collagenosis. *Dermatol Online J.* 2016;22(12).
15. Yazdi S, Saadat P, Young S, et al. Acquired reactive perforating collagenosis associated with papillary thyroid carcinoma: a paraneoplastic phenomenon? *Clin Exp Dermatol.* 2010;35(2):152-5.
16. Morton CA, Henderson IS, Jones MC, et al. Acquired perforating dermatosis in a British dialysis population. *Br J Dermatol.* 1996;135(5):671-7.
17. Lee YS, Vijayasingam S, Tan YO, et al. Acquired perforating dermatosis associated with recurrent hepatocellular carcinoma. *Int J Dermatol.* 1996;35(10):743-5.
18. Quinlan C, Boggs J, Finan M, et al. A case of paraneoplastic elastosis perforans serpiginosa associated with ovarian malignancy. *Int J Dermatol.* 2018;57(4):470-72.
19. Kim RH, Kwa M, Adams S, et al. Giant acquired reactive perforating collagenosis in a patient with diabetes mellitus and metastatic breast carcinoma. *JAAD Case Rep.* 2016;2(1):22-4.
20. Mehregan AH, Schwartz OD, Livingood CS. Reactive perforating collagenosis. *Arch Dermatol.* 1967;96(3):277-82.

This article is protected by copyright. All rights reserved.

Accepted Article

21. Kawakami T, Saito R. Acquired reactive perforating collagenosis associated with diabetes mellitus: eight cases that meet Faver's criteria. *Br J Dermatol.* 1999;140(3):521-4.
22. Hurwitz RM, Melton ME, Creech FT, 3rd, Weiss J, Handt A. Perforating folliculitis in association with hemodialysis. *Am J Dermatopathol.* 1982;4(2):101-8.
23. Akoglu G, Sungu N, Karaismailoglu E, et al. Expression of the receptor for advanced glycation end products in acquired reactive perforating collagenosis. *Indian J Dermatol Venereol Leprol.* 2017;83(4):432-35.
24. Hong SB, Park JH, Ihm CG, et al. Acquired perforating dermatosis in patients with chronic renal failure and diabetes mellitus. *J Korean Med Sci.* 2004;19(2):283-8.

Table 1. Patient demographic, clinical, histopathological and treatment characteristics.

		Min-Max	*Median*	*Mean.±s.d./n-%*
Age		*21 - 89*	*59*	*58,4 ± 12,6*
Sex	*Female*			*49* *61,2%*
	Male			*31* *38,8%*
Type of APD *	*PF ‡*			*14* *17,5%*
	RPC †			*66* *82,5%*

This article is protected by copyright. All rights reserved.

Accepted Article

Location of the lesions					
Head-Neck				*4*	*5,0%*
Trunk				*61*	*76,3%*
Upper extremity				*50*	*62,5%*
Lower extremity				*64*	*80,0%*
Koebner phenomenon				*35*	*43,8%*
Symptom					
Pruritus				*80*	*100,0%*
Pain				*0*	*0,0%*
Histopathology					
Epidermal loss	*(-)*			*44*	*55,0%*
	(+)			*36*	*45,0%*
Basophilic debris	*(-)*			*3*	*3,8%*
	(+)			*77*	*96,3%*
Transepidermal collagen elimination	*(-)*			*15*	*18,8%*
	(+)			*65*	*81,3%*
Duration to diagnosis (months)		*0,1 - 240*	*2*	*15,1 ± 38,0*	
Duration of follow-up (months)		*1 - 101*	*3*	*17,6 ± 25,7*	
				n	*%*
Type of treatment					
Topical therapy				*72*	*90,0%*
Topical therapy+phototherapy				*8*	*10,0%*
Treatment response					
No response				*2*	*2,5%*
Partial response				*34*	*42,5%*
Complete response				*44*	*55,0%*
Mortality	*Alive*			*61*	*76,3%*
	Exitus			*19*	*23,8%*

*APD: Acquired perforating dermatosis, † RPC: acquired reactive perforating collagenosis , ‡ PF: acquired perforating folliculitis

Table 2. Associated systemic disorders.

		Min-Max	*Median*	*Mean.±s.d./n-%*	
Comorbidity	*(-)*			*9*	*11,3%*

This article is protected by copyright. All rights reserved.

	(+)						*71*	*88,8%*
		*DM**					*66*	*82,5%*
		HBV†					*2*	*2,5%*
		CKD‡					*28*	*35,0%*
		HCV§					*1*	*1,3%*
		Vitiligo					*1*	*1,3%*
		Hypotiroidism					*2*	*2,5%*
		Scabies					*1*	*1,3%*
		Psoriasis					*1*	*1,3%*
		Malignancy					*4*	*5,0%*
			Breast carcinoma				*2*	*2,5%*
			Ovarian carcinoma				*1*	*1,3%*
			Hepatocellular carcinoma				*2*	*2,5%*
Kidney replacement in CKD patients	*(-)*						*13*	*46,4%*
	(+)						*15*	*53,6%*
Insulin therapy in DM patients	*(-)*						*27*	*40,9%*
	(+)						*39*	*59,1%*
Hba1c (%)				*5,7*	*-*	*13,3*	*8,5*	*8,8 ± 1,9*
Concomitant disease after diagnosis of APD	*(-)*						*77*	*96,3%*
	(+)						*3*	*3,8%*
Retinopathy	*(-)*						*57*	*71,3%*
	(+)						*23*	*28,8%*

*DM: diabetes mellitus, † HBV: hepatitis B infection, ‡ CKD: chronic kidney disease, § HCV: hepatitis C infection

Accepted Article

This article is protected by copyright. All rights reserved.

Table 3. The comparison of RPC⋆ and PF† group.

			PF†		RPC*		p	
			Mean.±s.d./n-%	Median	Mean.±s.d./n-%	Median		
Age			*55,4 ± 16,0*	*55,5*	*59,0 ± 11,8*	*59,5*	*0,340*	*t*
Sex	*Female*		*10*	*71,4%*	*39*	*59,1%*	*0,389*	*X²*
	Male		*4*	*28,6%*	*27*	*40,9%*		
Comorbidities	*(-)*		*4*	*28,6%*	*5*	*7,6%*	***0,045***	*X²*
	(+)		*10*	*71,4%*	*61*	*92,4%*		
		DM§	*10*	*71,4%*	*56*	*84,8%*	0,230	X²
		HBV††	*0*	*0,0%*	*2*	*3,0%*	1,000	X²
		CKD‡	*8*	*57,1%*	*20*	*30,3%*	0,056	X²
		Others	*1*	*7,1%*	*7*	*10,6%*	1,000	X²
Kidney replacement in CKD patients	*(-)*		*4*	*50,0%*	*9*	*45,0%*	*0,811*	*X²*
	(+)		*4*	*50,0%*	*11*	*55,0%*		
Insulin therapy in DM patients	*(-)*		*6*	*60,0%*	*21*	*37,5%*	*0,183*	*X²*
	(+)		*4*	*40,0%*	*35*	*62,5%*		
Hba1c (%)			*8,1 ± 1,7*	*8,0*	*8,9 ± 1,9*	*8,6*	*0,344*	*m*
Location of the lesions								
Head-Neck			*1*	*7,1%*	*3*	*4,5%*	*0,544*	*X²*
Trunk			*13*	*92,9%*	*48*	*72,7%*	*0,108*	*X²*
Upper extremity			*10*	*71,4%*	*40*	*60,6%*	*0,447*	*X²*
Lower extremity			*11*	*78,6%*	*53*	*80,3%*	*0,883*	*X²*
Koebner phenomenon			*6*	*42,9%*	*29*	*43,9%*	*0,941*	*X²*
Duration to diagnosis (months)			*12,9 ± 14,5*	*12,0*	*15,5 ± 40,9*	*2,0*	*0,324*	*m*
Duration of follow-up (months)			*20,6 ± 32,8*	*2,0*	*17,0 ± 24,2*	*3,5*	*0,538*	*m*
Type of treatment								
Topical therapy			*13*	*92,9%*	*59*	*89,4%*	*1,000*	*X²*
Topical therapy+phototherapy			*1*	*7,1%*	*7*	*10,6%*		
Treatment response								
No response			*0*	*0,0%*	*2*	*3,0%*		
Partial response			*7*	*50,0%*	*27*	*40,9%*	*0,905*	*X²*
Complete response			*7*	*50,0%*	*37*	*56,1%*		
Mortality	*Alive*		*9*	*64,3%*	*52*	*78,8%*	*0,247*	*X²*
	Exitus		*5*	*35,7%*	*14*	*21,2%*		
Retinopathy	*(-)*		*11*	*78,6%*	*46*	*69,7%*	*0,505*	*X²*
	(+)		*3*	*21,4%*	*20*	*30,3%*		

Accepted Article

This article is protected by copyright. All rights reserved.

[t] *t test* / [m] *Mann-whitney u test* / [X²] *Chi-square test*

*RPC: acquired reactive perforating collagenosis , †PF: acquired perforating folliculitis, ‡ CKD: chronic kidney disease, § DM: diabetes mellitus, †† HBV: hepatitis B infection

Accepted Article

This article is protected by copyright. All rights reserved.