ORIGINAL ARTICLE

CUTANEOUS MANIFESTATION IN PATIENTS OF RENAL DISORDERS

Bhavesh Astik[1]

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ABSTRACT: BACKGROUND: Disease that affect skin and kidney can be linked in a number of different ways. **AIMS:** To observe the incidence and pattern of cutaneous in patients of CRF, undergoing dialysis and transplantation. **METHODS:** 125 patients of renal disorders were studied, attending the OPD during the year 2001-2003. **RESULT:** Among total 125 patients, pruritus and dryness (70.4%) was commonest cutaneous manifestation, next to it was pallor of skin and ichthyotic changes (60.8%). Half-Half nail were observed in 23.2% of Patients. Beau's line seen in 13.6% patients. **CONCLUSION:** 125 patients of renal disorders were studied. Maximum number of patients was in 3rd and 4th decade of life. Dryness, pruritus, ichthyotic changes, pallor of skin was the commonest cutaneous features.
KEYWORDS: CRF, Pruritus, Xerosis.

INTRODUCTION: Skin is the largest organ of the body. It behaves like a mirror for various systemic disorders-renal disorders is one of them. Kidney is the chief excretory organ. Skin is affected by uremia in case of renal failure, vice a versa kidney is affected by skin disease like impetigo. Perforating dermatoses are associated with renal disorders.
Relationship between kidney and skin can be established in many ways like[1]:

1. Cutaneous manifestation in renal disorder.
2. Inherited disorders affecting skin and kidney.
3. Acquired / systemic disease affecting both kidney and skin.
4. Cutaneous side effect of treatment for renal disorders.
5. Renal disease related to drug therapy use to treat skin disease.

BACKGROUND: Basically in practice the renal disorders are classified as:-

1. CRF
2. Patients who are under dialysis treatment.
3. Post-transplant patients.

Primary dermatological manifestation in patients of chronic renal failure includes Xerosis, Bruise/Echymoses, Oral changes, Pruritus, Pigmentary alteration, Half and Half nail, Other nail changes, Alopecia, Uremic frost, Bullous dermatosis, Pseudeporphyria cutanea Tarda (PCT), Perforating dermatoses (APD), Calcinosis cutis, Calciphylaxis, Prurigo nodularis, Gynacomastia.

METHODS: 125 patients of renal disorders were studied, attending the OPD during the year 2001-2003. History was recorded in details, regarding age, sex, occupation, chief dermatological complain regarding renal disorders, history of drug, past history, family history etc. All the patients were examined thoroughly including general physical, systemic and dermatological

examination as per proforma. All routine investigation like haemogram, urine analysis, RFT, x-ray chest and KUB were carried out in each patient. Special investigation like creatinine clearance, USG kidney, renal biopsy, ECG, LFT, MRI, CT scan were carried out in patients as and when required. In required cases fluoroscopic microscopy was also performed. All observation was recorded and complete record was maintained.

RESULT: 125 patients of various renal disorders were studied during the period of 20 month. Patients who were under the treatment including dialysis (n=71) were also included. 68% of male and 32% female were affected with various renal disorders Male: Female ratio 2:1. In present study maximum numbers of patients were seen in 3rd, 4th and 5th decade i.e. 81 (64.80%).

Uremic frost and half nail is marker of CRF. 57.1% of patients were having uremic follicular hyperkeratosis. Cutaneous manifestations like calciphylaxis and gynaecomastia which may be seen in CRF were not found in present study.

Cutaneous Manifestation (Skin changes)	No. of Pts.	%
Pruritus	88	70.4
Dryness	88	70.4
Pallor of skin	76	60.8
Ichthyotic changes	76	60.8
Oedema feet	62	49.6
Hyperpigmentation of skin	55	44
Scaling	50	40
Purpura	31	24.8
Oedema face	29	23.2
Acquired perforating Dermatoses (APD)	28	22.4
Uremic foetar	25	20
Uremic frost	9	7.2
Tinea versicolor	6	4.8
Monomorphic lesion of Acne	5	4
Subcutaneous calcification, Plain wart each	4	3.2
H.Zoster, Lichen planus, Miliaria, Striae distance, Bullous lesion each	3	2.4
Telangiectasia, Folliculitis, Chicken pox, Actinic keratoses each	2	1.6
Seborrheic dermatitis, Tinea capitis, PPK, Haemingioma each	1	0.8

Table 1: Cutaneous Manifestation In Patients of Renal Disorders (n=125)

Cutaneous Manifestation (Mucosal and appendages)	No. of Pts.	%
Hair loss	36	28.8
Half and half nail	29	23.2
Apthous stomatitis	21	16.8
Beau's line	17	13.6
Onycholysis	9	7.2
Onychomycosis	8	6.4
Nail pitting	6	4.8
Transverse ridge of nail	5	4
Candidiasis	4	3.2
Flag sign, Vertical ridge of nail, Koilonychia each	3	2.4
Hypertrichosis, Hirsutism, Mee's line, Dystrophy of nail each	2	1.6
Alopecia totalis, Clubbing of nail, Muercke's striae, Oral erosion, Xerostomia, Vulvar erythema each	1	0.8

Table 2: Cutaneous Manifestation In Patients of Renal Disorders (n=125)

Cutanesous Manifestation	No. of Pts.	%
Dryness (Xerosis)	70	86.41
Pruritus	66	81.48
Ichthyotic changes	61	75.30
Pallor of skin	54	66.66
Scaling	47	58.02
Hyperpigmentation of skin	43	53.08
Purpura	22	27.16
Hair loss	21	25.92
APD	21	25.92
Half and Half nail	19	23.45
Uremic frost	9	11.11
Subcutaneous calcification (Calcinosis cutis)	4	4.93

Table 3: Cutaneous Manifestation in Patients of CRF (n=81)

Cutaneous Manifestation	No. of Pts.	%
Pruritus	11	55
Pallor, Dryness of skin each	7	35

Ichthyosis, Hyperpigmentation of skin each	5	25
Oedema feet, Hair loss, Monomorphic acne	4	20
APD, Half and half nail each	3	15
Oedema face, purpura, H.zoster, Tinea versicolor, Plain wart each	2	10
Scaling, folliculitis, chicken pox, PPK, Miliaria,Bullous lesion, each	1	5

Table 4: Cutaneous Manifestation in Patients of Post Transplantation (n=20)

Cutaneous Manifestation	No. of Pts.	%
Dryness of skin	63	88.73
Pruritus	59	83.09
Ichthyosis changes	56	78.87
Pallor skin	48	67.60
Scaling	42	59.15
Oedema feet	40	56.33
Hyperpigmentation of skin	39	54.92
APD	22	30.98
Purpura	20	28.16
Half and half nail	19	26.76
Oedema face	8	11.26
Bullous lesion of dialysis(PCT)	2	2.81

Table 5: Cutaneous Manifestation in Patients Undergoing Dialysis (n=71)

DISCUSSION: Present study was carried out with a view to observe the clinical spectrum of cutaneous manifestation in patients of various renal disorders. Youngest patients was of 4 year and eldest was of 79 years with maximum patients of renal disorders in 3rd and 4th decade, which was in accordance with the study of Tawade et al,[2] in which majority of renal disorder patients were in 3rd and 4th decade. There was no patients below the age of 10 years in CRF, in present study, correspond to the study of arzte et al.[3] Some cutaneous manifestation might take place before the diagnosis of renal disorders like malaria, hemangioma, Palmoplantar keratoses etc. Some drug used for the treatment of renal disorders cause cutaneous lesion while some were merely associated incidentally with renal disorders.

Cutaneous Manifestation	% in present study	Gurcharan Singh et al[4]
Pruritus	81.48	47%
Xerosis	86.41	-
Pallor	66.66	70%
Hyperpigmentation	53.08	36%

Scaling	58.02	90%
Purpura(Ecchymoses)	27.16	6%
Half and half nail	23.45	13%
Hair loss	25.92	20%
APD	25.92	-

Table 6: Comparative study in Patients of CRF (n=81)

Gurcharan Singh[4] has observed pruritus in 47% of patients. In other different studies by Bussel et al,[5] Pico et al,[6] Thomas Tayler et al,[7] Chargin et al[8] – the range varies from 15% to 90% of patients. Hyperpigmentation is influenced by factors like race, sunlight etc. In present study patients were included who were on dialysis or had undergone transplantation who were on drugs like oral steroid, anticoagulants or immunosuppression etc. Half and half nail was observed in 23.45%. Gurcharan[4] observed in 13% of cases. In different studies by Lindsay PG et al[9], Strewart et al[10] have observed in 16% to 50.6% cases.

CRF is a cause of Acquired perforating dermatoses (APD) and in present study it was observed in 25.92% of patients. Though Rapini et al[11] observed in 10% of patients. In post-transplant patients viral infection was observed in 25%, while Julia R[12] observed in 15 to 50% of patients. Tinea versicolor observed in 10%, while study of Julia R[12] observed in 18 to 48%. They were on immunosuppressive therapy so the incidences of superficial fungal and viral infection were higher in comparison to the patients of renal disease and patients on dialysis.

Cutanesous Manifestation	**% in present study**	**Tawade et al[2]**
Pruritus	83.09	34%
Xerosis	88.73	46%
Hyperpigmentation	54.92	23%
Half and half nail	26.76	17%
APD	30.98	17%
PCT	2.81	-

Table 7: Comparative study in Patients Undergoing Dialysis (n=71)

In accordance with present study Julia R,[12] Thomas et al,[7] De-Kares et al,[13] Tapia et al,[14] Gilchrest et al[15] has observed in up to 90%, though it was observed 34% in Tawade et al.[2] Xerosis was observed in 88.73%, staphle et al[16] has observed in 90% though Tawade[2] has observed in 46%. In study of Barba, Lubach et al[17] Hyperpigmentation was observed in 60 to 78% of cases. Tawade[2] has observed in 23% cases. In different study by Nunley et al,[18] kint and Lubach et al,[19] Luback et al,[20] the range of half and half nail varies from 15% to 50%. PCT was observed in 2.81% while Brivet and Thivolet et al[21] has observed between 1% to 16% of patients. It was been observed that the no. of cutaneous manifestation and its severity has a relationship with duration of disease and type and effectiveness of treatment.

CONCULSION: It seems that Dermatologist can play a wide role in the management of the associated skin disorder and significant importance to the cutaneous examination is warranted in the patients of renal disorders. Routine dermatological examination in time can be proved useful in preventing and better controlling infectious disease and skin malignancy. Kidney and skin both are functionally working as an excretory organ. So by managing renal disorders the cumulative effect of it can be minimizing both functionally as well as structurally.

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AUTHORS:

1. Bhavesh N. Astik

PARTICULARS OF CONTRIBUTORS:

1. Lecturer, Department of Dermatology, Government Medical College, Bhavnagar.

NAME ADDRESS EMAIL ID OF THE CORRESPONDING AUTHOR:

Dr. Bhavesh N. Astik,
Lecturer,
Department of Dermatology,
Government Medical College, Bhavnagar.
E-mail: drbhaveshastik@yahoo.com

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