

Pattern of Cutaneous Manifestations of End Stage Renal Disease in Lagos Metropolis



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BACKGROUND

Cutaneous manifestations of End Stage Renal Disease (ESRD) are a common occurrence worldwide due to the rising number of patients with ESRD. A high prevalence of cutaneous manifestations is expected, since most patients with ESRD have an underlying disease process with cutaneous manifestations. In addition, uraemia and conditions associated with renal replacement therapy are fraught with numerous and often relatively unique cutaneous disorders.

OBJECTIVE

To determine the pattern of cutaneous manifestations in End Stage Renal Disease patients in Lagos.

METHODS

One hundred and thirty-eight patients with a diagnosis of End Stage Renal Disease (GFR < 15mls/min) from Lagos University Teaching Hospital, Life Support and St Nicholas Hospital, Lagos, Nigeria as well as renal transplant patients were examined for cutaneous manifestations. Also one hundred and thirty eight non-renal, non-hypertensive, non-diabetic patients from the medical wards of L.U.T.H, with Chronic Kidney disease stage 0, GFR > 90mls/min were used as controls.

RESULTS

Cutaneous manifestations were seen in 134 cases (97%) and 91 controls (65.9%). $P < 0.0000001$. The most prevalent disorders were general skin changes which included xerosis, pruritus, pallor, sallow yellow cast, half and half nails and acquired ichthyosis. A total of 14 cases had medication related disorders, 7 (5.1%) had hypertrichosis, 5 (3.6%) had steroid acne and 2 (1.4%) gingival hyperplasia. There were three cases of microbial disorders, two with pityriasis versicolor and a case of viral wart.

CONCLUSION

Cutaneous manifestations of ESRD in Lagos metropolis is common, with xerosis being the commonest manifestation

INTRODUCTION

CUTANEOUS manifestations of ESRD are a common occurrence worldwide due to the rising number of patients with ESRD. A high prevalence of cutaneous manifestations is expected, since most patients with ESRD have an underlying disease process with cutaneous manifestations. In addition, uraemia and conditions associated with renal replacement therapy are fraught with numerous and often relatively unique cutaneous disorders.¹ Studies have shown that 50-100% of ESRD patients and renal transplant recipients have cutaneous manifestations.² Dermatologic disorders associated with renal transplantation are a function of immunosuppressive

medications prescribed, as well as the immunosuppressive condition produced.¹ Factors such as time after transplantation, geographic location, climate and skin type, greatly influence clinical disorders associated with renal transplantation.² Cutaneous manifestations of ESRD can be classified into general skin changes usually due to uraemia and include xerosis, ichthyosis pallor, sallow yellow cast, half and half nails, pruritus, hyperpigmentation, elastosis of the skin, uraemic frost and alopecia. The perforating disorders are acquired perforating dermatoses. Calcifying disorders are benign nodular calcification (calcinosis cutis) and calciphylaxis. Bullous dermatoses in ESRD include porphyria cutanea tarda and pseudoporphyria. Also nephrogenic fibrosing

dermatopathy and arterial steal syndrome can also occur. Dermatoses associated with renal transplantation include immunosuppression related disorders, viral, bacterial, fungal and parasitic infections. Other dermatologic manifestations include actinic keratosis; and malignancies such as squamous cell carcinoma, keratoacanthoma, basal cell carcinoma, kaposi sarcoma, melanoma and miscellaneous malignancies such as lymphoma, merkel cell carcinoma and dermatofibroma protuberans.¹

METHODOLOGY

From August 2006 to June 2007, one hundred and thirty-eight (138) randomly selected adult patients aged 15 years and above, who fulfilled the inclusion criteria and presented at LUTH, Life support and St. Nicholas hospital, Lagos with diagnosis of ESRD and renal transplant patients were recruited. Control subjects were non-renal, non-hypertensive and non-diabetic patients of the medical wards of LUTH. Questionnaires were administered which included patient's biodata, diagnosis of medical conditions, medications, dialysis and transplantation history. Patients were examined for cutaneous manifestations. The statistical software (Epi Info 2002) was used for data entry and analysis.

RESULTS

The results obtained are summarized by Table 1 and Figures 1 and 2.

Cutaneous manifestations included general skin changes, medication related disorders and microbial disorders. In the study population 134 (97.1%) had cutaneous manifestations, while amongst the controls 91 (65.9%) had cutaneous manifestations. This was statistically significant. ($X^2 = 42.2$; $P < 0.0000001$).

General skin changes were the most common cutaneous manifestation. 133 (96.4%) had general skin changes, whilst among the controls, 88 (63.8%) also had. This is statistically significant ($X^2=44$, p value = 0.0000001).

Medication related disorders include hypertrichosis due to steroids, cyclosporine and minoxidil, gingival hyperplasia due to cyclosporine, and steroid acne.

They were present in 14 (10.1%) of the study population, while controls had no medication disorder. ($X^2 = 12.7$; $P = 0.0004$) significant.

Microbial disorders comprise bacterial, fungal, viral and parasitic infestations. Of the study population only three (2.2%) of the cases had microbial disorders, while 5 (3.6%) of controls had microbial disorders. Two of the cases had pityriasis versicolor, while one had viral warts on the gluteal region. All the controls had dermatophyte infections (*Tinea corporis* and *pedis*). $X^2 = 0.13$; P value = 0.4

No malignancy was found amongst the study and control populations.

In the study population 11 patients (8%) had a single lesion

while 123 (89.1%) had multiple lesions.

DISCUSSION

The prevalence of cutaneous manifestations in the study population was 97.1% as compared to Pico,³ Nanette⁴ and Udayakumar⁵ who found cutaneous manifestations in 100% of patients studied. Nunley¹ reported similar cutaneous manifestations and was contrasted by Velasco⁶ who reported in 50% of patients. This shows a high prevalence of cutaneous manifestations in keeping with other studies from the Western world. Xerosis was the commonest manifestation, consistent with other studies which demonstrated it in majority of patients studied.⁴ Pruritus, pallor, sallow yellow cast, acquired ichthyosis, half and half nails, uraemic frost and dystrophic nails were cutaneous manifestations that were statistically significant when compared to controls.

Minimal number of study population had medication related disorders in contrast to the controls who were all negative.

The disorders were hypertrichosis, gingival hyperplasia and steroid acne which occurred only in the transplant patients. This is expected because of the cytotoxic drug regimen used to maintain their transplant. Microbial disorders were few, this may be due to the fact that transplant patients who tend to have more of these disorders were fewer than the dialysis population.⁷ Apart from one woman who reported bullous eruptions that healed with post-inflammatory hyperpigmentation, no other patient presented with

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bullous, perforating or calcifying disorders. The absence of perforating disorders may be due to the minimal number of diabetics in the study. No malignancy was recorded amongst the transplant patients. The minimal number of transplant patients may account for this, as well as the fact that both malignant and premalignant lesions have been reported to increase with greater time after

transplantation and to be related to sun exposure and skin type.

CONCLUSION

The study showed general skin changes to be the most prevalent of cutaneous manifestations in subjects with ESRD, with xerosis being the commonest manifestation. ■

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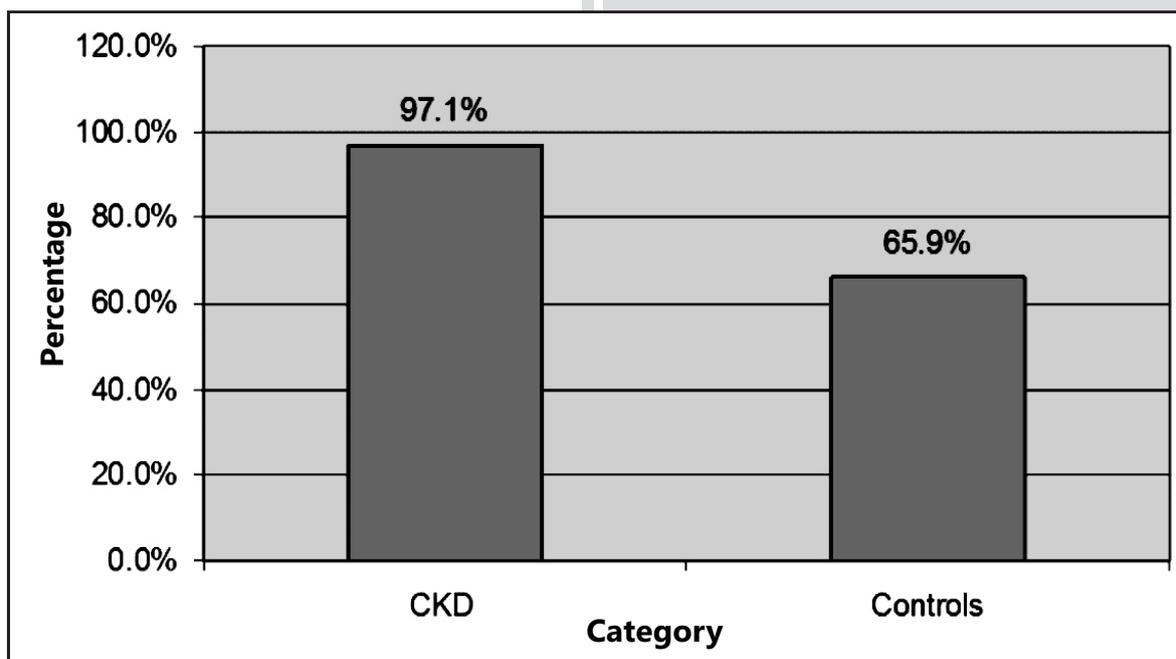


Figure 1: Frequency of cutaneous manifestations of ESRD in cases compared to controls

Frequency of general skin changes in ESRD cases and controls						
General skin changes	ESRD Frequency	%	Controls Frequency	%	Statistics χ^2	P value
Pruritus	45	32.6	10	7.2	26.2	0.000002
Easy bruising	3	2.2	0	0	1.4	0.12
Pallor	92	66.7	70	50.7	6.6	0.01
Sallow yellow casts	55	39.9	4	2.9	53.9	<0.000001
Xerosis	102	73.9	11	8	121.4	<0.000001
Ecchymoses	4	2.9	1	0.7	0.8	0.19
Poor skin turgor	3	2.2	2	1.4	0	1.00
Acquired Ichthyosis	37	26.8	6	4.3	24.8	0.000002
Hyperpigmentation	20	14.5	6	4.3	7.2	0.007
Uraemic frost	6	4.3	0	0	4.3	0.02
Half and half nails	36	26.1	7	5.1	21.6	0.000004
Dystrophic nails	5	3.6	0	0	3.3	0.03
Dilated arteriovenous Fistula	3	2.2	0	0	1.4	0.12

TABLE 1 - Frequency of generalized skin changes in ESDR cases and a Control population

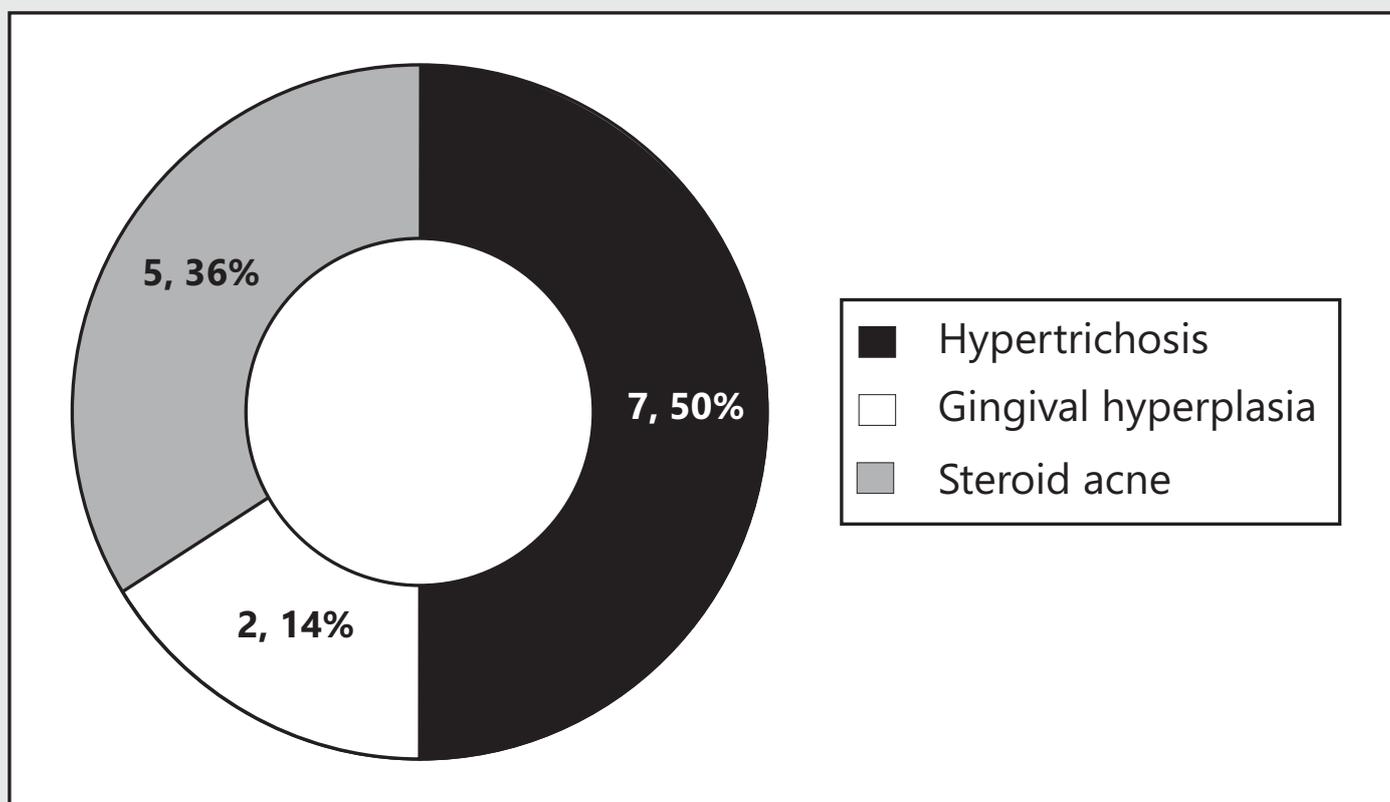


Figure 2: Subtypes of medication-related disorders amongst the ESRD cases