



A PROSPECTIVE COMPARITIVE STUDY OF NON SURGICAL CUTANEOUS SKIN MANIFESTATIONS AND NAIL CHANGES IN CHRONIC KIDNEY DISEASE PATIENTS COMPARED TO HEALTHY PERSONS

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ABSTRACT

Chronic Kidney Disease Induces Systemic Metabolic Biochemical and Microvascular Shifts That Profoundly Alter The Integumentary System. While Healthy Population Exhibit Localized Skin or Nail Changes Due To External Factors or Acute Factors.

KEYWORDS

Cutaneous and skin manifestations, nail changes in chronic kidney disease and healthy patients, xerosis, Lindsay's nail, hyperpigmentation, lunula

INTRODUCTION

CKD Suffering is about 8% - 16% of the worldwide population. CKD is defined as the kidney damage or decreased kidney function for 3 or more months. In low and middle income Population CKD is more prevalent which leads to high mortality and morbidity. At least one associated cutaneous change is seen in patients with CKD- STAGE V.



Figure 1: Hyperpigmentation



Figure 2 : Lindsay's Nail



Figure 3 : ABSENT LUNULA



Figure 4 : Uremic Xerosis

Table – 1: General Details

Integumentary Abnormalities	Ckd patients	Healthy Controls	P-value
Uremic xerosis	71.2%	11.5%	<0.001
Pruritus	53.8%	0.0%	<0.001
Hyperpigmentation	34.6%	0.0%	<0.001
Absent Lunula	42.3%	3.8%	<0.001
Lindsay's Nail	38.5%	0.0%	<0.001

MATERIALS AND METHODS

This is a Case study to compare the nail changes and cutaneous manifestations in CKD patients and normal persons. It was conducted over a period of 18 months in SRI LAKSHMI NARAYANA INSTITUTE OF MEDICAL SCIENCES PUDUCHERRY

Patients were selected from the dialysis unit and nephrology OPD . It helped us to observe a number of cases across different conditions of CKD patients. Adults aged 25 to 60, clinically diagnosed for CKD patients with or without DM or HTN and normal persons. We excluded patients who is on pre-renal and post renal transplant dialysis and recurrent liver disease, Patients with nail changes due to any other causes, and comorbidities. The sample was Collected based on the prevalence of cutaneous manifestations and nail changes in CKD patients Compared to normal persons. underwent a detailed history taking, focusing on and nail related complaints. And also dermatological examination was performed to assess nail, skin, hair and mucosa. Nail changes were assessed for upper limbs and lower limbs. Cutaneous changes from head to toe. All the findings were recorded.

Data collection was done by clinical observation. We recorded patients name, age, sex, occupation, clinical details cutaneous manifestations and nail changes. With patient's consent, Nail changes and cutaneous manifestations were photographically documented. The data were

Cross verified for accuracy and confirmation before completion.

The total number of patients studied was 110 Of the 110 patients 94.2% of CKD patients and 23.1 % of normal persons has cutaneous manifestations and nail changes.

DISCUSSION

This study clearly shows that kidney failure changes the skin and nails In ways that healthy people never experience.

Uremic xerosis in CKD patients happens because of uremic waste that shrinks the sweat and oil glands.

Pruritus in ckd patient is caused by nerve errors in brain and bad chemicals in the blood and in normal healthy persons, it is due to release of histamines. Therefore in CKD patients they need special medications that acts directly on the nerves. Itching signals

Hyperpigmentation is due to accumulation of water soluble dietary pigments (Urochrome and Carotenoids) in the blood and deposit directly into the dermis and subcutaneous fat layer but in healthy individuals it would be filtered out. The other reasons for the same in CKD patients is due to Melanocyte overproduction and sun exposure amplification.

ABSENT LUNULA in CKD patients Mirrors chronic tissue hypoxia at the nail matrix, heavily exacerbated by secondary renal anemia and compromised microvascular perfusion While a faint or hidden lunula can be a normal anatomical variation in healthy people.

LINDSAY'S NAILS were completely absent in Healthy individuals but occurs in CKD patients the underlying pathology is chronic Subungual capillary wall thickening and localized edema in the proximal nail bed, contrasted against increased melanin synthesis and localized deposition of retained uremic solutes in the distal portion.

CONCLUSION

Cutaneous and nail abnormalities are highly prevalent in CKD patients compared to healthy individuals, serving as critical, non-invasive diagnostic indicators of renal failure, such as uremic xerosis and specific nail changes. These manifestations reflect systemic metabolic dysfunction and uremic toxin accumulation, which differ significantly from the localized, temporary dermatologic issues found in normal population.

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