NAIL CHANGES IN CHRONIC KIDNEY DISEASE PATIENTS UNDERGOING HAEMODIALYSIS

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ABSTRACT

BACKGROUND
Chronic kidney disease is defined as evidence of kidney damage over a period of 3 months with or without reduction of glomerular filtration rate revealed by clinical assessment, abnormal urinary finding, abnormal renal imaging or histologically proven disease. CKD is known to be associated with various nail pathologies. They may be related to the renal condition itself or its complication or due to therapy.

The aim was to study the frequency and spectrum of various nail changes in CKD patients undergoing haemodialysis.

MATERIALS AND METHODS
This study was conducted over a period of 6 months from May 2016 to Nov 2016 in a tertiary health care centre of Rajasthan. Total 100 patients of CKD undergoing haemodialysis were examined for nail changes like nail discoloration, absent lunula and others.

RESULTS
In our study, most common finding was nail dyschromia (49%) comprising various colours like brown, black, yellowish discolouration of nail plate followed by longitudinal melanonychia (44%). Other findings were absent lunula (35%), subungual hyperkeratosis (32%) and onycholysis (28%). Males (84%) were affected more than females (16%) and most of our patients were in age group of >40 years (41%).

CONCLUSION
We conclude that various nail changes are observed in haemodialysis patients and these findings emphasise the significance of nail assessment as a part of physical examination in Haemodialysis patients.

KEYWORDS
Chronic Kidney Disease, Haemodialysis, Nail Changes, Dyschromia.

study. All the patients included in the study had a history of at least three months of CKD and at least two months of haemodialysis. Out of 100 patients 84 were male and 16 were female. The blood work including Complete blood count, Serum creatinine and blood urea measurements was obtained.

All the 20 nails were examined. During examination, the structure, colour, lunula and the thickness of the nails were assessed. The nails of the patients on haemodialysis were examined and photographed using a 13.0 megapixel digital camera. Data on the clinical history, physical and nail examination, were collected using a standard questionnaire.

In patients with subungual hyperkeratosis, KOH mount and fungal culture was done to rule out any fungal infection. All procedures were performed and data were collected after taking written consent from the haemodialysis patients.

RESULTS

Out of 100 patients, 84 were male and 16 were female. Maximum number of patients were seen in age group of >40 years (41%) followed by 31 - 40 years (29%). The mean age of the patients included in the study was 43.4 (ranged from 17 to 67 years). These patients were on haemodialysis over a period ranging from 2 months to 8 years.

Majority of the patients were field workers (58%) followed by office workers (32%). In our study, 84% of haemodialysis patients had at least one nail pathology. Most common finding in our study was nail dyschromia (49%) comprising various colours like brown, black, yellowish discolouration of nail plate followed by longitudinal melanonychia (44%). Other major findings were absent lunula, subungual hyperkeratosis, onycholysis, beau's line, nail dystrophy, leuconychia.

Nail Changes | Percentage
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Nail Dyschromia | 49
Longitudinal Melanonychia | 44
Absent Lunula | 35
Subungual Hyperkeratosis | 32
Onycholysis | 28
Beau’s Line | 27
Nail Dystrophy | 23
Leuconychia | 21
Longitudinal Ridging | 21
Cuticle Rupture | 20
Half and Half Nail | 17
Mees’ line | 14
Pitting | 13
Nail Pallor | 8
Koilonychia | 3
Clubbing | 2

DISCUSSION

CKD is known to cause various pathologies of nails. Marcos et al reported at least one type of nail pathology in 86% of haemodialysis patients. In a study by Salem et al, 76% patients had nail involvement. In our study, 84% of haemodialysis patients had at least one nail disorder. In a study by Arshad et al, half and half nail was the most common finding (26%) in patients undergoing haemodialysis. Similar result was observed in a study by Salem et al (20%). In our study, half and half nail was seen in 17% patients.

Figure 1. Half and Half Nail

Nail dyschromia is defined as an abnormality in the colour of the substance or the surface of the nail plate or subungual tissue. The discolouration specifically due to the deposition of melanin is labelled as nail pigmentation. In our study, most common finding is nail dyschromia (49%) comprising various colours like brown, black, yellowish discoloration of nail plate.
Subungual hyperkeratosis was seen in 32% cases, in contrast to study by P Udaykumar et al who reported it in 12% cases. Onycholysis is defined as a distal or distal lateral separation of the nail plate from the underlying and/or lateral supporting structures (Nail bed, hyponychium, lateral nail fold), was seen in 28% of haemodialysis patients. In previous studies, it was reported in the range of 6 to 43% cases.\(^{2,9,10}\)

Mees' line is characterised by a single, transverse, narrow whitish line that runs the width of nail plate and is seen on multiple nails. In our study, it was seen in 14% cases in contrast to study by P Udayakumar et al who reported it in 7% cases.

Pitting (13%), nail pallor (8%), koilonychias (3%), clubbing (2%) were other minor findings in this study.

CONCLUSION

Frequent nail changes are observed in CKD patients undergoing Haemodialysis. Nail dyschromia, longitudinal melanonychia and absent lunula are the most common findings in our study. We conclude that various nail changes are observed in Haemodialysis patients and these findings emphasise the significance of nail assessment as a part of physical examination in Haemodialysis patients.

REFERENCES