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Dermatological manifestations of chronic kidney disease (CDK) in pediatrics

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Case Study : Background: Chronic kidney disease (CKD), regardless of its cause, may be accompanied by various skin lesions, where the most common symptom in children is pruritus however xerosis, skin hyperpigmentation, ecchymoses, acquired perforating dermatoses, nail lesions, calcinosis cutis, may be seen. Data on different skin lesions in children with CKD is very limited, so this study aimed at screening dermatological manifestations in pediatric patients with CKD. Methods: A cross sectional study conducted at on 70 CKD pediatric patients, with stage 2 to 5 on both conservative & hemodialysis (HD) management. Skin & nail examinations were conducted, where xerosis severity was assessed using a four-point xerosis assessment scale & pruritus was assessed using a visual analogue scale (VAS) on a scale of 1 to 10. Laboratory data were withdrawn at the time of examination. Results: Xerosis was the most frequent dermatological manifestation (78.6%) followed by pruritus (62.9%), pallor (35.7%), hyperpigmentation (20%), hypertrichosis (10 %), nail and hair abnormalities (8.5%) & post inflammatory hyperpigmentation (4.3%). Xerosis related to the HD efficacy (Kt/V), where the higher Kt/V was associated with less xerosis, in which effective HD contributes to better removal of uremic toxins, & hence decrease the xerosis. Leukocytosis was noticed in xerotic & pruritic patients, where xerosis & impaired skin barrier in children with CKD pose a risk for different cutaneous infections & inflammation, and hence pruritis. Other skin & nail manifestations hadn't affected by clinico-demographic data, CKD duration, CKD stage, type & duration of HD. Conclusions: Xerosis & pruritis are not uncommon dermatological manifestations among pediatric CKD patients, meanwhile the age of the patients & the underlying CKD etiology had no direct effect on skin changes. The most determinant factor affecting the xerosis was the HD efficacy, where higher efficacy was associated with less xerosis.

Dermatology CKD.png

		Groups		Test of significance		
		CKD Stage 5	CKD Stage 2-4			
		N (%)	N (%)	Value	p-Value	Sig.
PRURITIS	No	14 (40%)	12 (34.29%)	X^2= 0.245	0.621	NS
	Yes	21 (60%)	23 (65.71%)			
PRURITIS Grade	1	12 (57.14%)	14 (60.87%)	FE	0.947	NS
	2	6 (28.57%)	7 (30.43%)			
	3	2 (9.52%)	2 (8.7%)			
	4	1 (4.76%)	0 (0%)			
XEROSIS	No	7 (20%)	8 (22.86%)	X^2= 0.085	0.771	NS
	Yes	28 (80%)	27 (77.14%)			
XEROSIS Grade	1	14 (50%)	14 (51.85%)	FE	1.00	NS
	2	12 (42.86%)	12 (44.44%)			
	3	2 (7.14%)	1 (3.7%)			
Pallor	No	20 (57.14%)	25 (71.43%)	X^2= 1.556	0.212	NS
	Yes	15 (42.86%)	10 (28.57%)			
Hyperpigmentation	No	23 (65.71%)	33 (94.29%)	X^2= 8.929	0.003	NS
	Yes	12 (34.29%)	2 (5.71%)			
Nail abnormalities	No	35 (100%)	34 (97.14%)	FE	1.00	NS
	Yes	0 (0%)	1 (2.86%)			
Hair Abnormalities	No	32 (91.43%)	33 (94.29%)	FE	1.00	NS
	Yes	3 (8.57%)	2 (5.71%)			