CKD-ASSOCIATED PRURITUS (CKD-aP): NEW INSIGHTS INTO DIAGNOSIS, PATHOGENESIS, AND MANAGEMENT

Verduzco AH and Shirazian S. *Kidney International Reports.* 2020;5(9):1387–1402.

BACKGROUND

The pathophysiology of CKD-associated Pruritus (CKD-aP) is complex and not fully understood.

This narrative review explores current understanding of CKD-aP and its management, with a view to engendering more confidence around its treatment.

The four main theories for CKD-aP pathogenesis

Different itch syndromes work by unique pathways involving different cells and molecules.

There are 4 main theories for the pathogenesis of CKD-aP:

Toxin deposition

Rationale: Accumulation of vitamin A, aluminium, calcium, phosphorous, and hormones in the skin occurs due to underdialysis.

These compounds may act as pruritogens in a subset of CKD-aP patients.

Opioid imbalance

Rationale: Overstimulation of central mu-opioid receptors, antagonism of peripheral kappa-opioid receptors, or an imbalance of stimulation and antagonism of mu- and kappa-opioid receptors may cause itching.

Peripheral neuropathy

Rationale: CKD-aP may be caused by diseased neurons that are overactivated by pruritogens or activate itch signals when no pruritogens are present.

Nerve damage is highly prevalent in dialysis patients, and those with nervous system disorders are more likely to have CKD-aP.

Immune system dysregulation

Rationale: Microinflammation in the skin or systemic inflammation may stimulate itching.

High levels of inflammatory markers are seen in dialysis patients, and anti-inflammatory medication has been associated with a decrease in itching. The allergic response may also be inappropriately activated in CKD-aP patients, leading to inflammation and itching.

CONCLUSION

The etiology of CKD-associated Pruritus is complex and multifactorial. Although our understanding is incomplete, there are four main theories for CKD-associated Pruritus pathogenesis: toxin deposition, opioid imbalance, peripheral neuropathy, and immune system dysregulation. Research that better defines these mechanisms will improve our ability to prevent and effectively treat CKD-associated Pruritus.

VIFOR FRESENIUS MEDICAL CARE RENAL PHARMA

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CSL Vifor