Solutions to AJKD Blog’s Nephrology Jumble Bumble: Uremic Pruritus

1. HYPERMAGNESEMIA

2. PARATHORMONE

Pruritus is a common and disabling symptom in patients with end-stage kidney disease. It has been hypothesized that systemic inflammation plays a role, but the exact pathophysiology is incompletely understood. In addition to inadequate dialysis, other metabolic and endocrine conditions that have been identified as potentially pruritogenic are hypermagnesemia, hyperphosphatemia, elevated calcium-phosphate product, and hyperparathyroidism. Limited data from observational studies suggest that subtotal parathyroidectomy in patients with end-stage kidney disease and markedly elevated parathyroid hormone (PTH) (>1400 pg/mL) may reduce pruritus. However, there is no correlation between intensity of symptoms and levels of PTH, Ca, or phosphate, and respective target levels to prevent or treat CKD-associated pruritus are not known.

3. GABAPENTIN

Gabapentin is a gamma-aminobutyric acid (GABA) analogue anticonvulsant that is also used for neuropathic pain syndromes. Two recent placebo-controlled trials by Gunal et al and Razeghi et al demonstrated that thrice weekly gabapentin administered orally after hemodialysis was effective in reducing uremic pruritus refractory to oral antihistamines. The doses used in these studies were 300 mg and 100 mg, respectively. The maximum recommended dose in dialysis patients is 350 mg daily.

4. SERTRALINE

Sertraline, a selective serotonin reuptake inhibitor, is a commonly used antidepressant. A recent uncontrolled study suggested that low-dose sertraline (35 mg orally daily) reduced pruritus in non-dialysis CKD patients after treatment for a mean duration of 5.1 weeks. Further randomized trials are needed to define the role of SSRI’s in uremic pruritus.

Bonus Answer:

PHOTOTHERAPY
A few studies have examined the effects of UVB phototherapy on uremic pruritus and have concluded that it is highly effective in reducing the severity of moderate to severe pruritus. It is hypothesized that UVB therapy results in a decrease in pro-inflammatory cytokines and an increase in mast cell apoptosis, hence reducing systemic inflammation and pruritus. The risk of carcinogenesis, however, limits its use in patients with ESRD who are already immunocompromised. The risks and benefits of UVB therapy should be carefully considered before it is offered to patients.