Test Your Knowledge: Common Symptoms in Dialysis Patients

A recent *AJKD* In Practice article by Scherer et al highlight common troublesome symptoms affecting dialysis patients: sleep disorders, restless legs syndrome, and uremic pruritus. The following questions based on the article will test your knowledge on this topic.

1. Which of the following has been shown to be effective in improving sleep quality in patients on renal replacement therapy?
    A. Long term melatonin use
    B. 6 times weekly home hemodialysis treatment after one year
    C. Employing peritoneal dialysis vs hemodialysis
    D. Short term pharmacotherapy with benzodiazepine receptor agonists

2. True or False: Cognitive behavioral therapy (CBT) for sleep disorders in patients treated with hemodialysis is only effective if carried out in person by trained practitioners.
    A. True
    B. False

3. The following parameters have been associated with the pathogenesis of restless legs syndrome (RLS), **EXCEPT**:
    A. Positive family history
    B. Cerebral iron deficiency
    C. Serotonin deficiency
    D. Dopamine deficiency and increased glutamate levels

4. Long-term use of dopaminergic therapies such as ropinirole and pramipexole is associated with what serious complication?
    A. Long-term memory impairment
    B. Lightheadedness
    C. RLS symptoms augmentation
    D. Fatigue

5. As part of the approach to the management of restless legs syndrome, what is the recommended starting dose and frequency of gabapentin?
    A. 300-600 mg po TID, no adjustment is necessary
    B. 200 mg BID, reduced dose for reduced creatinine clearance
    C. Starting at 100 mg after each dialysis session to a max of 300 mg after each dialysis session
    D. Gabapentin is contraindicated in dialysis patients

6. Which of the following pharmacological interventions have not been shown to be effective for the treatment of uremic pruritus?
    A. Pregabalin
    B. Gabapentin
    C. Antihistamines
    D. Topical emollients

Quiz prepared by ***Miguel A. Cota Vargas*** *(Instituto Mexicano del Seguro Social UMAE 25, AJKD Blog Guest Contributor) and* ***Jean Francis*** *(AJKD Blog Contributor).*

To view the Scherer et al article **abstract** or **full-text** (subscription required), please visit **AJKD.org**.

All *AJKD* In Practice articles are available in this **collection**.

Solutions to *AJKD* Blog's Test Your Knowledge: Common Symptoms in Dialysis Patients

1. **D. Short term pharmacotherapy with benzodiazepine receptor agonists**

   Only pharmacotherapy is the correct answer. In a randomized, double-blinded, placebo controlled trial of 14 maintenance HD patients in Italy using an agent of this class at a dose of 10 mg (5 mg if age > 65), there was significant improvement of the total score of sleep quality versus placebo ($p < 0.03$) without significant side effects (Sabbatini et al).

2. **B. False**

   A trial of 103 chronic HD patients randomized to CBT-I (n = 52) versus control (n = 51, conventional HD) showed improvement in depression, anxiety, and sleep quality in the treatment group (Hou et al). A meta-analysis of 11 randomized controlled trials (n = 1460) showed improved sleep characteristics with internet-based CBT-I (eCBT-I) with results comparable to face-to-face CBT-I, representing a viable and easily delivered treatment option.

3. **C. Serotonin deficiency**

   Restless legs syndrome is characterized as an uncontrollable urge to move one's legs, with symptoms predominantly at night or at periods of rest. It has a prevalence of 12%-25% in dialysis patients. Serotonin deficiency has not been associated with the pathogenesis of RLS. A positive family history is present in 40% of cases. The *BTBD9* gene has been implicated in idiopathic RLS, as well as cerebral iron deficiency, dopamine deficiency, and increased glutamate levels.

4. **C. RLS symptoms augmentation**

   The long term use of dopaminergic therapies has been associated with a risk of RLS symptoms augmentation. Augmentation is defined as earlier onset of more severe symptoms, either by time, onset, shorter relief, or spreading of symptoms to other body parts. Treating physicians should be aware of this complication which may require discontinuation of this entire class of drugs.

5. **C. Starting at 100 mg after each dialysis session to a max of 300 mg after each dialysis session**

   Scherer et al recommend starting a low dose of non-ergot dopamine agonists or low-dose gabapentin (100 mg after each dialysis session to a max of 300 mg three times a week) with careful evaluation for side effects.

6. **C. Antihistamines**

   According to epidemiologic data from DOPPS, 41.7% of dialysis patients report moderate to extreme pruritis (Pisoni et al). Antihistamines have not been shown to be effective for the treatment of CKD pruritus. They are not recommended in recent reviews. A recent MRI study revealed that the central transmission of itch in uremic pruritus is through a non-histaminergic pruritus pathway. This could explain the lack of benefit with the use of this class of agents.

*Quiz prepared by **Miguel A. Cota Vargas** (Instituto Mexicano del Seguro Social UMAE 25, AJKD Blog Guest Contributor) and **Jean Francis** (AJKD Blog Contributor).*

To view the Scherer et al article **abstract** or **full-text** (subscription required), please visit **AJKD.org**.

All *AJKD* In Practice articles are available in this **collection**.