

**Harvard Medical School Department of  
Continuing Education and the Renal Division  
of Brigham and Women's Hospital**



***Nephrology Rounds***  
**2009 Volume 7 – Issue 3**

**Vitamin D and Its Role in Chronic Kidney Disease**

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**Objectives:**

This issue of *Nephrology Rounds* will help the reader in understanding the updated information on the pleiotropic effects of vitamin D. It also provides a review of the unique role of 25-hydroxyvitamin D (25[OH]D), and the management of vitamin D deficiency in patients with chronic kidney disease (CKD) including those on dialysis.

**Questions:**

1. Vitamin D deficiency is more common in patients with CKD than in the general population.  
True  False
2. Vitamin D 1 $\alpha$ -hydroxylase is expressed in cardiac myocytes and fibroblasts, indicating local 1,25(OH)<sub>2</sub>D production by the heart.  
True  False
3. Vitamin D stimulates insulin secretion and inhibits renin production; as a result, human studies suggest that individuals with adequate 25(OH)D levels are less likely to have cardiovascular risk factors, including diabetes and hypertension.  
True  False
4. Since there is still significant 1 $\alpha$ -hydroxylase activities in patients with early CKD, the levels of 1,25(OH)<sub>2</sub>D are well maintained above normal until the glomerular filtration rate drops below 45 mL/min (stage 3 CKD).  
True  False
5. Fibroblast growth factor 23 inhibits 1 $\alpha$ -hydroxylase activity, resulting in decreased synthesis of 1,25(OH)<sub>2</sub>D.  
True  False
6. There is compelling evidence to suggest that active vitamin D therapy is indicated in patients with CKD even if their parathyroid hormone (PTH) levels are low.  
True  False
7. Calcitriol is effective in suppressing PTH levels for patients with CKD; it also has minimal risks of hypercalcemia even at higher doses.  
True  False

8. Like doxercalciferol, paricalcitol is effective in suppressing PTH in CKD patients, and has minimal risk of hypercalcemia. However, paricalcitol tends to have slightly higher risk of hyperphosphatemia.

True  False

9. Because renal 1 $\alpha$ -hydroxylase activities are significantly reduced in dialysis patients, neither ergocalciferol nor cholecalciferol will be able to raise 1,25(OH)<sub>2</sub>D levels significantly.

True  False

10. In dialysis patients, paricalcitol is associated with improved survival when compared with calcitriol.

True  False

11. This issue of *Nephrology Rounds* adequately addressed the topic, and the data and discussion were fair and balanced.

AGREE  DISAGREE

12. Potential conflicts of interest disclosed by the author on the back page were properly expressed.

AGREE  DISAGREE

13. The information presented in this issue of *Nephrology Rounds* will increase my clinical knowledge and improve the care of my patients.

AGREE  DISAGREE

14. *Nephrology Rounds* from Brigham and Women's Hospital and Harvard Medical School is an effective CME program.

AGREE  DISAGREE

Comments/Topic Suggestions: \_\_\_\_\_

To receive AMA category 1 credit, you must correctly answer 60% of questions 1-10, and answer 11-14.

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