Calcitriol in Chronic Kidney Disease

Calcitriol (1,25(OH)2vitamin D) in Kidney Disease
Calcitriol measurement is most helpful in the treatment and monitoring of chronic kidney disease (CKD). A deficit of calcitriol is an important factor leading to the uncontrolled secretion of parathyroid hormone (PTH) resulting in secondary hyperparathyroidism (2-HPTH). Decreased functioning proximal tubule cells leads to a decrease in calcitriol which decreases intestinal calcium absorption, leading to hypocalcemia. As the ionized calcium (iCa) decreases, the secretion of PTH is stimulated. The excess PTH effectively resorbs bone in an attempt to raise iCa, resulting in bone loss. Calcitriol therapy is used in CKD to prevent the development of 2-HPTH, and also as a treatment.

Monitoring CKD
It is important to monitor serum iCa, PTH, and calcitriol concentrations in CKD. Renal 2-HPTH can occur prior to the development of azotemia, suggesting that routine monitoring of calcium status may be beneficial in older patients or those at risk of CKD. Serum total calcium measurement alone is not adequate since elevations of PTH and decreases of calcitriol can occur while serum calcium and phosphorus remain within normal limits. Periodic measurement of serum calcitriol can document decreases over time, and replacement therapy can be initiated early in the course of CKD to prevent 2-HPTH. For measurement, samples should be separated and refrigerated or frozen; ship with adequate ice to remain cold. Overnight shipping is recommended.

Client Education Resource Available
A one-page guide to help clinicians educate pet owners about living with a pet diagnosed with CKD is available online. Access this and other guides at animalhealth.msu.edu under Client Education.

For more information, please contact the Endocrinology lab at 517.353.1683, or visit our website at animalhealth.msu.edu.
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Endocrinology Services
The Endocrine Diagnostic Section has been in operation since 1979, providing extensive diagnostic testing. All testing is run in-house for best service. Our veterinary endocrinologists provide written interpretations of results, and are also available for phone consultations. Research on calcium disorders is a focus in our laboratory, and our endocrinologists have published many research papers and book chapters in this area.

Sample Submission Forms
Visit our website at animalhealth.msu.edu to access our most current submittal forms. Customized forms preprinted with your clinic information are also available at no cost via the Product Order Form.

Unbeatable Shipping
The MSU VDL offers a variety of shipping options. Our mailers comply with U.S. Postal Service, UPS, and FedEx regulations. All UPS mailers include prepaid overnight weekday delivery. All U.S. Postal Service mailers include prepaid delivery; delivery time will vary depending on your location.

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Standard, insulated, and biopsy mailers are available. Contact us at 517.353.1683 or complete the Product Order Form available online at animalhealth.msu.edu. You can also place an order by completing the SUPPLIES section on a submittal form.

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For shipping recommendations for individual tests, please refer to the information provided at animalhealth.msu.edu under “Available Tests.”

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Our veterinary professionals are available for consultation and can help you interpret your test results to better manage the health of animals entrusted to you.

Get Results by Email and Online
Had it with the fax machine? Contact us at 517.353.1683 to have results delivered by email.
All MSU VDL clients also have free, quick access to view results online through WebView. Reports are posted to the web hourly. Visit animalhealth.msu.edu and click “Log In” to request access to your diagnostic results.

Expect Quality in Testing and Service
The MSU VDL is a leader in establishing technical guidelines for public veterinary diagnostic laboratories in the United States and maintains a quality assurance team dedicated to promoting accuracy and reliability.

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