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DO YOU MAKE THESE COMMON MISTAKES

IN PRESCRIBING

CALCIUM SUPPLEMENTS?

by Guy R. Schenker, D.C.

You prescribe calcium for a menopausal woman concerned about osteoporosis and immediately she becomes severely constipated. Or, you recommend calcium to a man with insomnia. His arthritis begins acting up and he develops cold hands and feet. What about the woman with menstrual cramps? She takes your calcium and now she has insomnia. Or, you prescribe calcium for Tommy's developing teeth and bones and he starts getting painful muscle cramps. Just when you are convinced that calcium is the one supplement that will benefit nearly all your patients, everything is going wrong.

Your problem may be that you are using a disease-specific, empirical approach to clinical nutrition, when you could be approaching nutrition with a patient-specific system of objective testing.

The purpose of this article is twofold; to demonstrate that calcium supplementation can actually be detrimental to a patient's health, and, to show that there are objective clinical testing procedures that can tell you not only which patients should supplement with calcium and which should not, but exactly what form of calcium will be most beneficial to those who need supplementation.

BECOMING YOUR OWN AUTHORITY

Calcium may well be the world's most popular nutritional supplement. Why is that? The main reason for calcium's popularity is just good-old-fashioned Madison Avenue propaganda. For six decades Americans have been the beneficiaries of major advertising campaigns from the dairy industry promoting milk as the ideal food, especially for growing children. And milk's calcium content has been its major selling point. Everyone has just come to accept "on good authority" that calcium is in a class by itself as a nutrient. In reality, despite its high profile, calcium is no more important, nor any more likely to be deficient, than many other mineral nutrients.

For years, much media hype has been directed to osteoporosis and calcium supplementation. According to an article in Barrons, billions of calcium tablets were swallowed by a misguided American public in 1986 and 1987 in the name of strong bones. Scarcely a few grams is likely to have ever found its way into osseous tissue, as tons of chalk were flushed down millions of toilets. Some nutrition "authority" came up with the notion that people are in "calcium balance" if they swallow calcium at a rate faster than their bowels and kidneys can dump the stuff. That the gullible public bought it is no surprise. But that health care professionals are as easily duped is a sad state of affairs.

Imagine being no longer dependent upon the "authorities" to tell you what might be good for your patients. Imagine having your own objective testing system to tell you the specific nutrition needs of every patient. Each of the hypothetical patients described at the top of this article can be spared the iatrogenic symptoms if you perform just a few simple clinical tests.

YOUR PATIENT-SPECIFIC APPROACH TO CALCIUM SUPPLEMENTATION

Nutri-Spec has developed the means by which a clinician can obtain complete evaluation of each patient's body chemistry using objective test procedures. Urine and saliva chemistries as well as clinical tests are employed in analyzing the patient's metabolic imbalances (3). The Nutri-Spec system represents a radical departure from disease-specific methods of diagnosis and treatment, in favor of a purely patient-specific approach.

Nutri-Spec has defined five fundamental metabolic balance systems, the operations of which are involved in maintaining homeostasis of all physiological processes. All pathology reflects a loss of homeostasis associated with aberration in one or more of the five fundamental balances (4). Every patient's symptoms, therefore, have a nutrition component and will benefit from restoration of metabolic balance (5, 6).

When studied in this light, calcium metabolism is seen to involve three of the five fundamental balances, including; water/electrolyte balance, anaerobic/dysaerobic balance, and sympathetic/parasympathetic balance (7).

A patient with water/electrolyte imbalance can have either electrolyte insufficiency or electrolyte overload. In a case of insufficiency, the patient is mineral depleted and will likely benefit from supplementation with calcium along with other mineral nutrients.

In a patient with electrolyte overload, however, calcium supplementation may very well exacerbate the condition, perhaps even leading to life-threatening consequences. In this patient the body fluids have lost some of their electro-negative colloidal properties. They are thus subject to flocculation and rouleaux formation (1). Circulation is impaired and an excessive workload is placed upon the heart and kidneys. Calcium creates problems in this case because it is a bi-valent cation whose physical properties include increasing the tendency to flocculation in the blood and interstitial fluid.

A few simple clinical tests are all that is required to determine if a patient is at risk for electrolyte overload and if calcium in therapeutic doses should be avoided. The most important of these tests are abnormal urine surface tension and specific gravity, especially when they accompany elevated blood pressure and an exaggerated clinostatic pulse response.

When, for whatever reason, you feel you must give calcium to a patient with electrolyte overload, it should ideally be in the form of calcium citrate. The tri-valent citrate anion has a dispersing effect on the body fluids, tending to restore the electro-negative colloidal state and negating the potential harm of the calcium. Another option is to prescribe potassium citrate along with the calcium supplement.

Calcium metabolism can also be an important consideration in patients with anaerobic/dysaerobic imbalance. Low calcium is directly related to an anaerobic imbalance in the cells. The low calcium is not due to a quantitative deficiency since calcium levels are likely high in the blood and there is excess urinary calcium loss. A qualitative deficiency exists due to a decreased capacity of anaerobic cells to fix and utilize calcium. The patient with an anaerobic imbalance may benefit from calcium supplementation, but their most pressing need is for nutrients that fix calcium in the cells. Vitamin D is effective; combining calcium with aspartic acid is also helpful.

The dysaerobic patient, on the other hand, has elevated cellular calcium levels and increased urinary calcium retention. Administration of calcium will often exacerbate this patient's symptoms. Excess calcium results in cellular aging (2). A dysaerobic imbalance can also result in a local alkalosis, which results in precipitation of calcium as seen in the hypertrophic arthroses.

Calcium is antagonized in its anti-anaerobic function by potassium and zinc. Excess potassium or zinc supplementation will drive calcium away from its active site at the surface of the cell, thus decreasing the anaerobic patient's cellular adhesiveness, which allows increased invasiveness, resulting in a susceptibility to infection and allergy.

In its anaerobic/dysaerobic connection calcium is intimately associated with a number of other mineral nutrients. To summarize briefly: excess calcium antagonizes the assimilation and utilization of potassium, magnesium, boron, iron and manganese. Anaerobic patients may benefit from calcium supplementation, but must usually take magnesium, silica, and manganese with it. What they need most, however, is vitamin D. The ideal form of calcium in this case is calcium aspartate.

The dysaerobic patient rarely benefits from therapeutic doses of calcium, and is often harmed by them. When you must prescribe calcium to a dysaerobic patient the best form is calcium glycerophosphate. The glycerol helps prevent excess calcium accumulation and precipitation. Calcium citrate is also acceptable. Vitamin E is often essential to move calcium into the tissues.

How do you determine a patient's calcium needs with respect to anaerobic/dysaerobic balance? Again, a few objective clinical tests, performed in minutes in your own office, are all you need. The most informative tests in this instance are urinary surface tension, specific gravity, and pH, as well as dermographic reflexes.

The third and final fundamental balance involving calcium is sympathetic/parasympathetic balance. Calcium is antagonized by potassium and magnesium in its relation to autonomic nervous system activity. Calcium supports sympathetic activity and inhibits the parasympathetic system; potassium and magnesium do the reverse. Calcium is a vasoconstrictor; potassium and magnesium are vasodilators.

In a patient with an over-reactive sympathetic nervous system calcium will very often exacerbate symptoms. If you do supplement this patient with calcium, you must include potassium and/or magnesium as well. The one form of calcium definitely not compatible with the sympathetic imbalance is calcium combined with phosphorus. The ideal form of calcium for a particular sympathetic patient depends upon what other fundamental imbalances exist concurrently; give calcium citrate if he has electrolyte overload, aspartate if anaerobic, citrate if dysaerobic.

The parasympathetic patient frequently needs calcium supplementation. However, the need for phosphorus may also be critical. The solution is to give calcium combined with phosphorus, or, to give phosphoric acid along with calcium. The ideal form of calcium supplementation in this case is glycerophosphate if the patient is concurrently dysaerobic; otherwise, raw bone concentrate.

The differential between sympathetic/parasympathetic calcium needs can be made quickly with these simple clinical tests: dermographic reflex, pulse, clinostatic pulse, respiratory rate, and gag reflex.

SUMMARY OF BENEFITS TO YOU AND YOUR PATIENTS

A patient-specific approach to evaluating your patients' calcium needs gives you and your patients these important benefits:

- 1) Your patients will be taking just the amount of calcium they need, and in just the form that is most compatible with their body chemistry.
- 2) Your patients will not be wasting time and money on calcium supplements they do not need.
- 3) Your patients will no longer suffer adverse reactions to your prescribed supplements.
- 4) You will no longer have to practice nutrition by empirical trial-and-error methods. You can either prescribe or withhold calcium supplementation confidently, based on objective clinical tests.
- 5) You will not be dependent upon patients' subjective responses to your supplements. There will be no more chasing symptoms; you will have objective tests to monitor their progress.

This article has shown that calcium supplementation cannot be prescribed on an empirical, symptomatic basis. Furthermore, the means are readily available to determine the calcium needs of each patient. Objective clinical testing procedures are the only consistently efficacious means to implement patient-specific diagnosis and treatment. The familiar cliché applies, "We must treat the patient and not the disease."

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