

Oxalic Acid Bioaccumulation & Intolerance- A Novel Test and Solution

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Abstract

Oxalic acid is another “food toxin” that can wreak havoc in the body of susceptible individuals. Applied Kinesiology testing yields an extremely high percentage of false negatives when testing for weakness with an “indicator muscle”. Results on a group of random patients with this method, plus a new novel testing method is discussed, as well as how to remediate issues.

Key Indexing Terms

Oxalic Acid, Food Toxin, Intolerance, Applied Kinesiology

Introduction

Oxalic acid is an organic compound with the formula $C_2H_2O_4$. In susceptible patients it can lead to a host of symptoms. These include but are not limited to intense pain in your side and back, and many symptoms come in waves: pain when you urinate, blood in your urine (which can look red, pink, or brown), cloudy urine, foul-smelling urine, an urgent and constant need to urinate, kidney stones, nausea and vomiting, autism (1), COPD (2), asthma (2), thyroid issues (3), fibromyalgia, joint pains, brain fog, migraines, IBD, rashes, behavior and speech regression in children, arthritis, etc.

Oxalate problems, or excessive calcium oxalate crystals, can be due to increased biosynthesis, increased dietary ingestion of high oxalate foods, or insufficient degradation of oxalates. Laboratory testing of urinary oxalates is of limited value as a low value could indicate no problem or can indicate high bioaccumulation with little excretion. Also, a high value could indicate a high amount of bioaccumulation or a patient who efficiently excretes oxalates with little bioaccumulation.

Biosynthesis

“At least two pathways exist for the enzyme-mediated formation of oxalate. In one pathway, oxaloacetate, a component of the Krebs citric acid cycle, is hydrolyzed to oxalate and acetic acid by the enzyme oxaloacetase. It also arises from the dehydrogenation of glycolic acid, which is produced by the metabolism of ethylene glycol” (4).

Diet

Oxalic acid is found in significant amounts in rhubarb, spinach, chard, tea, beet greens, potatoes, okra, chives, raspberries, almonds, chocolate, miso (see <https://www.stjoes.ca/patients-visitors/patient-education/patient-education-k-o/pd-9447-oxalate-in-food.pdf> for a more complete list). Some foods can decrease their level by boiling and draining off the water or presoaking, but not all oxalates are water-soluble.

Degradation/ Accumulation

Oxalic acid can be broken down by the anaerobe oxalobacter formigenes, which ingests it. Many people with oxalate related illness have less than optimal amounts of this microbe in their intestinal tract (5). Increased intestinal permeability (which can be secondary to dysbiosis, food intolerance, glyphosate accumulation, etc.) will also increase bioaccumulation. There is some anecdotal evidence that Lactobacillus and bifidobacterium species may help to a very minor degree.

Procedure

AK Testing

When composing our initial research on food toxins (6), we omitted oxalic acid as when testing a sample on an indicator muscle we showed a positive response in less than 5% of subjects tested. Over the past year two separate events made us re-evaluate.

1) A health oriented AK doctor friend suffered from kidney stones that he felt was due to the number of green drinks he was ingesting (7)

2) Another AK physician sent us the following email- “Any thoughts on Oxalates? I have a few people who have dropped the high level containing foods and felt better, not to mention all the stone formers. This patient has hashimotos and is sensitive to Histamines. She tested among other things for SAME. She informed me that in her research she found that there is a connection between histamine issues genetically and oxalates. I have not confirmed this, but she went on a low oxalate diet (on top of no gluten, dairy, soy and histamines) and had a reduction almost immediately in joint pain, bloating after eating, itching in ears, rash under eyes (this was really bad) and increased energy. She was eating at least 4 of the top 10 highest oxalate foods daily. The skin change was the most dramatic and interesting to me” (8).

We started retesting the oxalic acid again but the results were as previously noted. With our new provocation work taught in the Lebowitz protocol since fall 2018 we decided to use the psoas as an indicator muscle to see if oxalic acid would test positive more frequently. It did not increase the percentage of patients we found a positive test results with. We picked the psoas due to the fact that oxalic acid is a major kidney irritant. Before giving up we decided to try vs the peroneus longus muscle and the results were incredibly significant.

Discussion

Results

We tested the next 36 patients that came into our office in Haiku, HI. This was a mixture of new and existing patients with various health concerns. We tested oxalic acid while held under the south pole of a magnet over GV-20. Only 4 out of 36 patients (11%) showed positive when using a general indicator muscle. Now while still holding the oxalic acid over GV-20 we tested the patients' peroneus longus muscle (first checking without oxalic acid to make sure the muscle was conditionally facilitated). With the peroneus longus muscle and holding the oxalic acid over GV-20 we found that it tested positive on 30/36 people (83%), including the 4 people it showed up with a general indicator muscle. Only 6/36 (17%) didn't show on oxalic acid when testing it with the provocation mentioned above. On 15 people it showed up with both the right and left peroneus longus muscles. Seven people only caused conditional inhibition ("weakening") of the right peroneus longus muscle and 4 only caused conditional inhibitory of the left peroneus longus muscle. If a person had a positive test via one of these muscles we checked to see if Uva Ursi negated the positive test and it did on 26/30 people (87%).

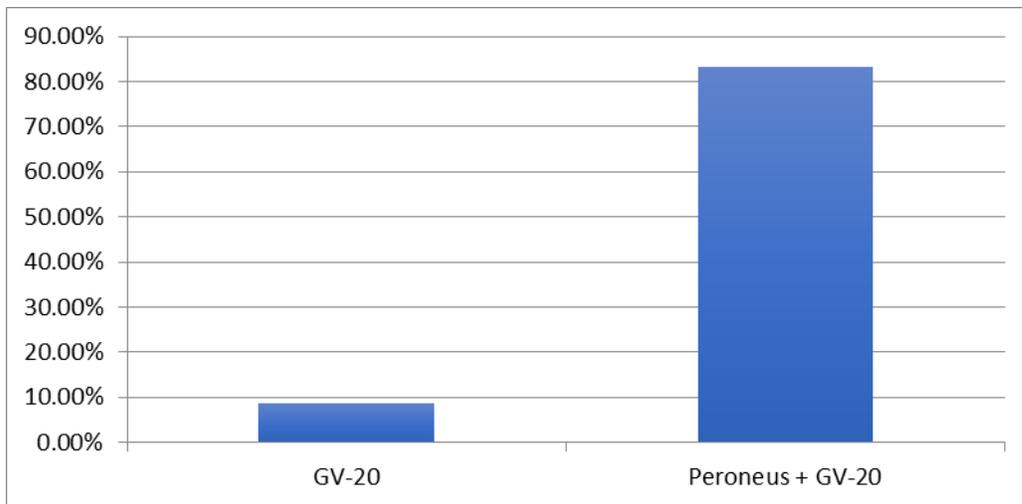


Figure 1. The percentage of positive tests when checking with a straight-arm test vs. checking the peroneus longus muscle

Conclusion

For people who have chronic symptoms that indicate oxalic acid issues this test is a novel and easy way to check for sensitivity to it in the office. If someone shows positive there are three main steps to take.

- 1, Avoidance of high oxalate foods.

2, Testing of herbs/nutrients that have been shown to help eliminate and/or prevent the build up of oxalic acid.

Elimination:

Uva ursi

In our clinical experience the most significant supplement and also show to prevent calcium oxalate crystallization (9)

Taurine

Important for making bile acid taurocholate which limits absorption of oxalate. Take if stool turns yellow. (10)

Alpha Lipoic Acid (ALA)

Works for some, not for others; important antioxidant and can prevent some endogenous production of oxalate. (10)

Glutathione

It helps reduce metabolism of glycolate to oxalate. (10)

Pantothenic acid or CoEnzyme A

Important to keep from making oxalate by glycolate cycle in microbes and us. (10)

Vitamin B6

Important for preventing metabolism of food to oxalate. (10)

Citrate (Calcium or Magnesium)

May prevent crystallization of oxalate and may help break down crystals already formed. (9)

3, Avoid vitamin C supplementation.

Supplemental Vitamin C should be avoided as it can be converted to oxalate (10)

A word of caution- it is anecdotally reported online that when people institute a low oxalate diet that they can experience "oxalate dumping" which can cause an exacerbation of symptoms or new symptoms. This can occur, although is less common with proper supplementation as well as applied kinesiology structural work directed to the appropriate areas according to the patient's individual needs.

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