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## Clinical Experience with Inorganic Non-radioactive Iodine/Iodide

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I have been interested in iodine supplementation for years. I have a holistic family practice in West Bloomfield, Michigan. Michigan resides in the Goiter Belt of the United States where the soil is deficient in iodine. Although I long suspected iodine deficiency in many of my patients, my initial uses of potassium iodide gave suboptimal results. Some patients did improve, but many did not notice any appreciable improvement. This article was written to assist the reader in implementing orthoiodosupplementation in their practice. This article will be divided into 2 parts: Part I will describe a doctor's (your author) introduction and education about the clinical uses of iodine while Part 2 of this article will give the reader 'clinical pearls' about how to integrate and use iodine in their practice.

Part I: A Doctor's Introduction and Education about the Clinical Uses of Iodine.

Approximately one and a half years ago, I read a letter to the editor in the *Townsend Letter for Doctors and Patients* titled "Iodine Supplementation Markedly Increases Urinary Excretion of Fluoride and Bromide". In this letter, Dr. Guy Abraham described the iodine/iodide loading test and its value at assessing whole body sufficiency for iodine. In addition, the article describes the detoxification effects of the toxic halogens, bromide and fluoride when iodine is in the orthoiodosupplementation range. I was intrigued at the idea of not only measuring body iodine levels but using a combination of iodine and iodide rather than using iodide alone. This started me on a long journey of researching and learning all that I could about iodine deficiency and iodine supplementation. Dr. Abraham was instrumental in teaching me about iodine.

One and a half years ago, I began testing my patients for the loading test. Although I expected lowered body iodine levels, I was not ready for the magnitude of the results. After testing over 500 patients, I found that 94.7% of my patients are deficient in inorganic iodine. Many of these patients were already being treated by me for thyroid and other endocrine imbalances, including SSKI. When physiologic doses of iodine/iodide were added to their regimen, many of these patients showed dramatic improvement in their condition, especially patients who were non-responders, even though some were taking SSKI.

The illnesses that iodine/iodide has helped are many. These conditions include Fibromyalgia, thyroid disorders, chronic fatigue immune deficiency syndrome, autoimmune disorders as well as cancer. Most patients who are deficient in iodine will respond positively to iodine supplementation. In fact, I have come to the conclusion that iodine deficiency sets up the immune system to malfunction which can lead to many of the above disorders developing. Every patient could benefit from a thorough evaluation of their iodine levels.

Iodine deficiency is often thought of as synonymous with thyroid malfunction, particularly with the development of goiter. The research is clear that iodine deficiency can lead to cysts and nodules of the thyroid gland. David Marine reported the benefits of treating school-aged children with iodine/iodide (Lugol's solution) nearly 70 years ago. Marine looked at two groups: a control group and a treatment group, which received 9mg/day of iodine/iodide. The iodine/iodide treatment group had a 0.2% incidence of goiter while the control group had a 22% goiter—a 110x difference. This was the first U.S. iodine study showing the decline of goiter formation with the use of iodine. Shortly after this study, iodized salt was initiated which was a great success in eliminating goiter in the U.S.

In medical school, little was taught about iodine. Specifically, we were taught that the iodization of salt was implemented to prevent goiter and therefore no further iodine was necessary in the diet. After studying the literature on iodine, I realized what I was taught in medical school was incorrect. The iodization of salt was adequate to lessen the prevalence of goiter, but it did not address the rest of the body's need for iodine.

When I began testing my patients for iodine levels, I was amazed at the prevalence of iodine deficiency. As previously stated, 94.7% of my patients have tested low for iodine. I have noticed those patients with chronic illnesses, from autoimmune disorders to cancer, often have lower iodine levels as compared to relatively healthy patients.

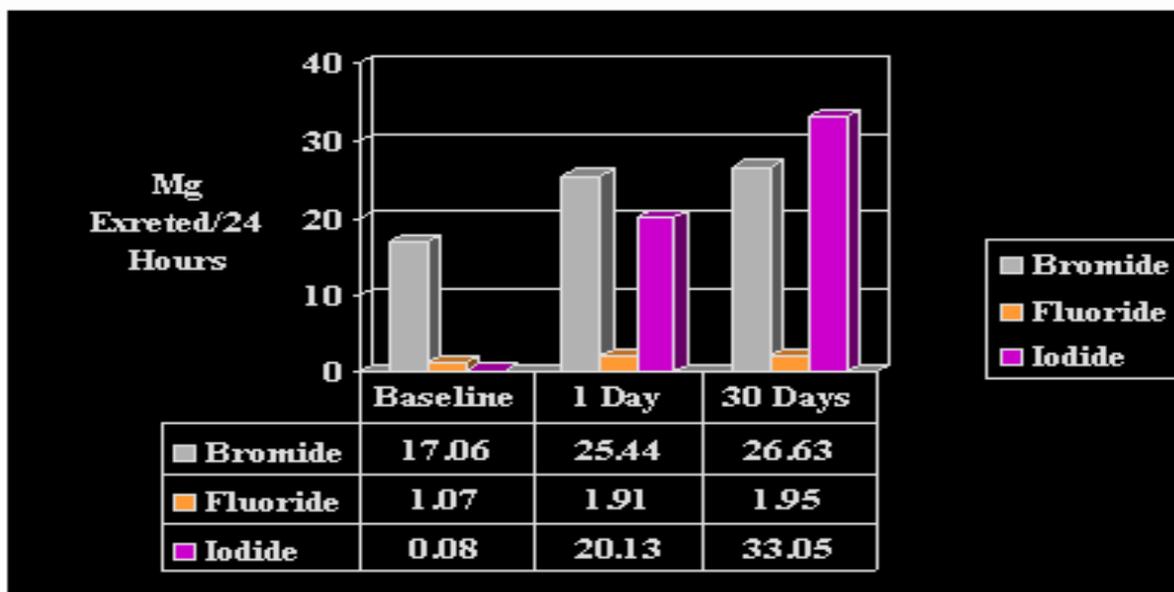
I was initially hesitant to use higher (>1mg) doses of iodine due to my concern about causing adverse effects. In reviewing much of the literature there was concern about larger doses of iodine causing hyperthyroid symptoms. However, a further, more exhaustive review of the literature failed to prove that iodine, in milligram doses ever was shown to cause hyperthyroid symptoms. In fact, as iodine levels have fallen over 50% in the last 30 years in the United States, autoimmune disorders and hyperthyroid symptoms have been increasing at near epidemic proportions.

After testing individuals and finding low iodine levels, I began to use smaller milligram amounts of iodine/iodide (6.25mg/day). Upon retesting

these individuals 1-2 months later, little progress was made. I therefore began using higher milligram doses (6.25-50mg) to increase the serum levels of iodine. It was only with these higher doses that I began to see clinical improvement as well as positive changes in the laboratory tests.

Why would people need the larger doses of iodine? Why have iodine levels fallen 50% in the last 30 years? As I pondered these questions, I came to the conclusion that the toxicity of modern life must be impacting iodine levels. It is well known that the toxic halides, fluoride and bromide, having a similar structure as iodine, can competitively inhibit iodine absorption and binding in the body.

A study was performed in my office to look at the iodine levels as well as the toxic halogen levels bromide and fluoride in 8 random patients. None of the patients had been treated with iodine before the study. The patients were studied at baseline to look not only at their iodine levels but also their bromide and fluoride levels. Next, after taking a loading dose of iodine (50mg of iodide/iodine--Iodoral®) they were rechecked for their levels of iodine, bromide and fluoride. The patients then took a loading dose of iodine (50mg of iodide/iodine--Iodoral®) for 30 days and they repeated a 24-hour urine collection. The results are summarized in Table 1 below.



As can be seen from Table 1, little iodine was secreted at baseline. The data indicates that all of these patients were iodine deficient at baseline. After ingesting 50mg/day of an iodide/iodine supplement (Iodoral®), repeat testing was done on day 1 and after 30 days of supplementation. As iodine was supplemented, as expected, the excretion of iodine increased—from 40.2% to 66.15%. Increasing the iodine load also increased the excretion of the toxic halides bromide and fluoride.

This study showed that the body was adapting to the iodine load and becoming saturated with iodine while at the same time detoxifying from the toxic halides bromide and fluoride. This study provided me with the answer to the two questions previously posed. Because of the elevated levels of toxic halides in the environment and in the food supply, iodine levels have not only fallen but larger amounts of iodine are necessary to correct iodine deficiency as well as to promote a detoxifying effect of heavy metals.

As I started to use larger doses of iodine (12.5-50mg/day), I began to see positive results in my patients. Goiters and nodules of the thyroid shrank. Cysts on the ovaries became smaller and began to disappear. Patients reported increased energy. Metabolism was increased as evidenced by my patients having new success in losing weight. Libido improved in men and women. People suffering with brain fog reported a clearing of their foggy feelings. Patients reported having vivid dreams and better sleep. Most importantly, those with chronic illnesses that were having a difficult time improving began to notice many of their symptoms resolving.

Betty, a 65 year-old female, saw me for fatigue and a swelling of her neck. Betty was taking Synthroid for a hypothyroid condition and was euthyroid via lab tests at the initial visit. Betty's main complaint was fatigued. "I always feel tired. I wake up tired and I go to bed tired," she complained. Upon physical exam, the thyroid was estimated to be 2x normal size and multiple nodules were palpated bilaterally. The left lobe had a nodule estimated on palpation to be 1.5cm in size. Betty was sent for an thyroid ultrasound which reported "multiple thyroid nodules bilaterally and a cystic nodule in the isthmus with overall dimensions of 1.9x0.7x1.3cm containing a heterogeneous area in its inferior aspect measuring 6mm. Betty was sent for a biopsy of the large nodule. While awaiting a biopsy, an iodine loading test was performed which showed a 50% excretion (normal >90%). She was promptly started on 50mg iodine/iodide (Iodoral®). After taking the iodine/iodide pills for 6 weeks, Betty went for the ultrasound-guided biopsy. The radiologist reported that "the borders of the nodular area were difficult to delineate with certainty. Due to this difficulty in clearly delineating the margins, I felt that it would be difficult to biopsy and that follow up of this lesion was recommended." Six weeks of iodine/iodide therapy had significantly improved her condition to the point of not needing a biopsy! Betty's story has been repeated over and over in my practice over the last two years.

The breasts are the second main glandular storage site for iodine next to the thyroid gland. The relationship between breast illness and iodine deficiency has been reported for over 100 years. Iodine concentrates in the breast and is secreted from the breast. Normal breast architecture will not develop when there is iodine deficiency present. Diseased breast tissue has been shown to take up more iodine as compared to healthy breast tissue. The higher uptake in the abnormal breasts indicates a greater deficiency of iodine is present as compared to normal breasts.

Maryann is a 45 year-old R.N. who has been a patient of mine for five years. I diagnosed Maryann with hypothyroidism five years ago and she was being treated with Armour Thyroid. Her hypothyroid conditions (fatigue, hair falling out, etc.) improved significantly with thyroid replacement and she was presently euthyroid. Maryann was also suffering from fibrocystic breast disease. "I was thinking about a mastectomy. I can't wear a bra because my breasts are so tender," she said. Maryann was told to avoid caffeine and go on birth control pills to treat the cystic breasts. She could not tolerate the birth control pills and received minimal improvement from dietary changes. When I checked an iodine loading test, Maryann was found to be very low on iodine (27% excretion—normal >90%). Within three weeks of taking 50mg of iodide/iodine (Iodoral®), all her breast symptoms were improved. She said, "My pain level declined immediately and after three weeks, it was 70% better. I can now wear a bra without pain." Two months later, a physical exam revealed no signs of fibrocystic breasts and she was now completely pain free. "I am ecstatic. I can now exercise and I feel just wonderful," Maryann said.

Iodine/iodide supplementation has markedly improved the course of illness in fibrocystic breasts in almost all of my patients with fibrocystic breast disease. In addition those with breast cancer also improve. Nodules and fibrous changes of the breasts significantly improve in a short time period. I believe that the epidemic of breast disease we are seeing in this country is due, in no small part, to iodine deficiency.

There are many other illnesses also improved with iodine therapy. Table 2 gives examples of some of these illnesses.

Iodine has many positive therapeutic actions. It is a potent anti-infective agent. No virus, bacteria or parasite has been shown to be resistant to iodine therapy. I have found that providing adequate iodine to provide the body with iodine sufficiency markedly decreases the number and severity of infections in these patients. Table 3 lists some of the other therapeutic actions of iodine.

My clinical experience with using physiologic doses of iodine/iodide (6.25-50mg/day) has been very positive. To date, in my practice, my partners and I have treated over 3,000 patients. The side effects with using these doses have been minimal. Rarely, have I observed iodism (metallic taste in mouth, frontal sinus pressure/pain, and increased salivation). Iodism is easily rectified by adjusting the dose of iodine down or simply telling the patient to await the resolution of these symptoms which takes approximately 1-3 weeks. True iodine allergy to inorganic, non-radioactive iodine is very rare. In treating over 3,000 patients, I have found three patients with "allergy" to non-radioactive inorganic iodine/iodide. An acupuncture technique, NAET (NAET.com) has proven very effective to reverse this allergy. Allergy to fish, shellfish or radioactive iodine does not mean there is an allergy to inorganic non-radioactive iodine. In fact, true inorganic iodine allergy is very rare.

## Part II: Clinical Pearls

Who should be checked for iodine deficiency?

A: Iodine deficiency is wide-spread. The National Health and Nutrition Survey undertaken by the CDC showed iodine levels falling over 50% in the last 30 years. All patients with chronic illness need to be assessed for iodine status.

How Do You Check Iodine Levels?

A: Urine iodide levels are the accepted method.

Can you do spot urine iodide levels?

A: Yes. This provides information on the iodine status of the body, especially if the patient is not taking any iodine as a supplement. I have found this test very useful.

Should you do an iodine/iodide-loading test?

A: Yes. An iodine/iodide loading test provides useful information on the iodine status of the body. If there is severe iodine deficiency, the body would be expected to hold on to more of the ingested iodine. When there is iodine sufficiency present, 90% of the ingested iodine (50mg) will be excreted.

Should you use iodide only products?

A: No. My experience has clearly shown that iodide only products (SSKI) are inferior to iodine/iodide products. Different tissues of the body will preferentially bind different forms of iodine.

How much iodine do you start with?

A: If there is severe deficiency, spot urine iodine levels at or near zero or low iodine loading tests results (<50% excretion), higher iodine levels are generally needed. To maximize absorption and retention of iodine, doses of 25-50mg may be needed in patients. The sodium-iodine symporter, which pumps iodine into the cells against a gradient will achieve a maximal response when serum iodine levels approach  $10^{-5}$  -

$10^{-6}$  M concentration.

What are the side effects of iodine?

A: The most common side effects encountered are; acne, metallic taste in mouth, sneezing, excess saliva and frontal sinus pressure. These reactions are relatively rare, occurring in less than 5% of patients.

What about iodine allergy?

A: My experience has shown true allergy to inorganic, non-radioactive iodine is very rare. Out of over 3,000 patients treated with iodine I have found 3 with a true allergy exhibiting symptoms of a skin rash. These patients were treated with NAET (www.naet.com), an acupuncture treatment and two were able to overcome their allergy and take the iodine. One of the three above patients has not been able to take iodine due to an allergy.

Does an allergy to shellfish or radioactive iodine imply an allergy to inorganic non-radioactive iodine?

A: No. An allergy to organic iodine does not imply an allergy to inorganic non-radioactive iodine.

If someone is on thyroid medication, can they still take iodine?

A: Yes. The body needs adequate amounts of iodine to properly utilize thyroid hormone. Those individuals already on thyroid medication may need to lower their dose of thyroid medication upon starting iodine therapy. My experience has shown that 1/3 of patients currently taking thyroid medications will need to lower their dose of thyroid hormone after starting iodine supplementation.

How do you know when to lower their dose of thyroid medication?

A: If the patient exhibits signs of too much thyroid hormone (palpitations, nervousness, etc.), it is time to lower the dose. Generally, I have found in those patients on thyroid medication where the addition of iodine causes hyperthyroid symptoms, a 50% reduction in the dose of thyroid hormone will rectify the problem. If the patient is on a low thyroid dose (i.e., <1grain of desiccated thyroid or <.088mg Levothyroxine), the addition of therapeutic doses of iodine can result in the patient not needing to take any thyroid medication.

Finally, the use of inorganic, non-radioactive iodine has been a wonderful addition to my practice. The use of iodine doses in the ranges described in this article have been used by our medical predecessors and by different cultures safely and effectively. I encourage physicians to check their patients for their iodine status and to correct iodine deficiency when it is present.

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