

High-Dose Vitamin C IV Therapy – Cancer Protocol

Vitamin C is also known as Ascorbic Acid. A water-soluble vitamin not made in the body, we mainly get it from food or dietary supplements. Found in many fruits and vegetables such as oranges, red and green peppers, kale, Brussel sprouts, broccoli, strawberries, grapefruit, guava, and kiwi. An antioxidant that protects our cells from oxidative stress caused from free radicals...basically, it helps clean up damage from the daily stress of our lifestyle and environment.

Beneficial in many other ways:

- Increase collagen production to maintain healthy bones, blood vessels, and skin
- Aides in absorption of iron
- Helps with cholesterol control
- Can shorten the duration of the common cold

Why Give it IV?

Under normal conditions, your GI system can only absorb and use up to 200-250mg a day...the rest escapes through the urine. Most people with cancer have low ascorbic acid or vitamin C in their system, adequately replenishing it may improve immune system function needed to fight the cancer as well as improve overall well-being. The IV route bypasses the GI track, enabling the body to take in the higher doses necessary to be effective at fighting cancer cells. High doses can be administered safely with minimal side effects

Why Give IV Vitamin C for Those with Cancer?

At these high doses (between 50,000mg and 100,000mg), the vitamin C becomes preferentially toxic to cancer cells and spares the healthy ones. Two-time Nobel Prize winner Linus Pauling studied the benefits of vitamin C therapy starting in the late 1970s and found beneficial effects.

In animal studies, high dose IV vitamin C has been found to inhibit tumor growth in many cancers (pancreatic, hepatic/liver, prostatic, sarcoma, ovarian, and mesothelioma). Low levels of vitamin C are associated with elevated CRP (a marker in your blood that tells us about your inflammation status) and a shorter survival time. Studies have shown an increased survival time with vitamin C treatment given IV specifically, no effects are seen with oral doses. IV vitamin C can reduce chemotherapy related symptoms such as fatigue, insomnia, decreased appetite, nausea, and pain. IV vitamin C has been shown to increase efficacy of certain chemotherapies.

What is the High-Dose Vitamin C IV Cancer Protocol?

Phase 1:

Come in for an evaluation and discuss appropriateness of therapy and what to expect. We will need information on the type and stage of cancer you have, copies of any imaging reports, and current or past cancer treatments you have received.

We will need to check a few basic labs:

- Blood count and electrolytes (CBC and CMP)
- Urinalysis—to check ascorbic acid levels in the urine
- Screening for G6PD deficiency (an inherited blood disorder that can cause red blood cell destruction with high-dose vitamin C) ***this test is not covered by insurance***
- Micronutrient panel that will help us optimize any pre-existing nutritional deficiencies and get a baseline vitamin C level. ***potentially not covered by insurance, usually covered partially by Medicare***
- Discuss importance of nutrition during this protocol

We will work with you in designing a diet plan that will help your body operate to its fullest antioxidant potential. Fill out a symptoms checklist prior to starting therapy and during to track symptom improvements. Schedule your appointment for infusion and sign a consent for therapy.

Phase 2:

We will gradually titrate you up to the highest effective dose:

- 1st infusion—15,000mg IV for 30 minutes
- 2nd infusion—25,000mg IV for 1 hour
- 3rd infusion—50,000mg IV for 1.5 hours

After this infusion, we will draw a vitamin C level to ensure you are at an optimal dose. If the dose is optimal, you will stay at this level...if not, we keep titrating up.

- 4th infusion (if not at optimal dosing)—75,000mg IV for 2.5 hours

Check vitamin C level again. If the results are not optimal, we will titrate the dose up to the ceiling dose of 100,000mg IV over 3.5 hours and repeat level to confirm efficacy.

Phase 3:

Once optimal dosing has been achieved (most people are optimized at 50,000mg), you will receive twice weekly infusions for up to a year. We will check vitamin C levels monthly to confirm that you are still receiving the appropriate dosing.

Precautions with IV Vitamin C Therapy

Some people may not benefit from Vitamin C infusions.

Infusions may affect the following types of people negatively:

- Those with congestive heart failure
- Diabetics: blood sugars may be falsely elevated on the day of the infusions since the infusion may alter glucometer results.
- One case of acute oxalate nephropathy (oxalate kidney stones) was reported, although most tolerate the infusion well.
- Those with a high iron load should use caution as vitamin C increases absorption of iron.

- Anyone with a G6PD deficiency is at risk for hemolytic anemia (death of red blood cells) with high doses of vitamin C.

IV vitamin C is not covered by insurance at this time.

Pricing depends on dose. Please email Amy@txlifemed.org for more information.

****We strongly encourage you to discuss this with your oncologist first. We are available to answer any questions your doctor may have about the therapy****

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