

Chemotherapy Patients Need Vitamin B-12 Shots!

By Dr. Neil McKinney

Chemo can cause problems with blood cell counts. The bone marrow is a tissue that is dividing almost as rapidly as cancer cells, and so will have its DNA damaged by the drugs. Red blood cell levels fall, causing anemia. White blood cells drop, causing immune weakness. The chemotherapy doctors (medical oncologists) closely monitor the neutrophil counts – these are your first responders to infection, and when they are too low, you can get serious infections. If they get low enough, chemo is delayed or even stopped. Platelets may drop, causing bleeding due to clotting problems.

Chemotherapy often causes nerve damage – numbness, coldness, tingling, pain and disability. The taxane drugs, cyclophosphamide and the platinum drugs such as Cisplatin are the worst offenders.

A lack of vitamin B12, usually because of absorption issues, causes a medical condition called pernicious anemia. Anemia because the red blood cell levels drop, causing dry skin, fatigue, shortness of breath, all due to poor oxygen delivery to tissues. The pernicious aspect is due to the injury to the nerves. It begins in the fingers and toes and can extend up from there. We also know B12 is important to make various brain/nerve biochemicals, which is why B-12 shots have long been used to help elderly people feel less fatigued, to treat depression, and to help repair nerve damage from a variety of causes.

I discovered some time ago that B-12 shots can rapidly raise neutrophil and other immune cell counts, and platelets, and red blood cell counts, in patients undergoing chemotherapy. It gives the marrow a kick and it spits out a bunch of new cells, not just the red ones. I have also long used it to help folks recover from nerve injury from chemo drugs, as well as from head injury, and other trauma.

It is often the case that medical doctors – GPs and oncologists – will test the blood for B-12 level, and if it tests normal, they refuse to give the patient a shot of B-12. I have always argued this is inappropriate, even though on the surface it seems logical. We are using the vitamin as a drug to push out more blood cells, or to heal nerves, and even if blood levels are normal, more is necessary to make the healing go faster than normal.

Finally, the science has been published that vindicates my point of view, and shows how important this therapy is for chemo patients, and why testing for B12 levels doesn't give any useful information here. In the *Journal of Clinical Oncology*, the most respected medical journal in our field, I have found an article which explains the need for this vitamin, and why the blood tests for it can be irrelevant. It turns out that many chemo drugs render your vitamin B12 inert. Technically, the active holo-transcobalamin form is converted into the metabolically inert holohaptocorrin form. The same oxidative stress that chemo generates to kill cancer cells will also oxidize the vitamin B-12 into a permanently inert state. The inactive form reacts on the blood test exactly the same as the active form, so the test may show a

normal level, but it is not able to tell if it is in the form we can use. In other words, the test is not informative and should not even be ordered.

If chemo drugs are making 80% or more of your B12 inert, we would expect to see anemia and nerve problems – which we do. We would expect to see patients receiving fresh, active B-12 to improve – even if their blood test showed normal B12 status – and we do.

I recommend all chemo patients get an intramuscular injection of B-12 every month.

You will feel better, you are more likely to get through chemo safely, and we can prevent what may become an irreversible nerve injury.

Metformin, B12, and Enhanced Breast Cancer Response to Chemotherapy, Garcia & Tisman, **J. Clin. Oncol.** 2010; 28 (2): e19.