Hype around high-dose vitamin C is unjustified

Vitamin C needs little introduction—it is an essential vitamin found in many fruits and vegetables. Shortages can cause scurvy as it is needed for healthy skin, soft tissues, bones and blood vessels, but eating a balanced diet gives more than enough vitamin C. Higher doses of 1000 mg per day have been shown to reduce the chances of catching a cold in some situations, and can also probably reduce the duration of colds. In addition, there is some evidence that a diet rich in vitamin C can help reduce the chances of getting cancer.

There is currently a great deal of media hype, particularly in New Zealand, around the use of massive doses of vitamin C for people with serious illnesses. This can be traced back to Linus Pauling, a brilliant physicist and winner of two Nobel prizes, who claimed that massive doses of vitamin C, 10,000 mg per day, could help to treat cancer. This claim was based on a study he was involved with of 100 patients with advanced cancer, which concluded that those given huge doses of vitamin C survived 3 to 4 times longer than those who were not given the supplement.

It would be a huge breakthrough in cancer treatment if it was true, but his study was seriously flawed and three similar but scientifically valid studies undertaken later at the Mayo Clinic found no benefits from the same doses of vitamin C in similar patients. As well as being shown not to work in good studies, Cancer Research UK strongly advise against the use of high-dose vitamin C as it can reduce the effectiveness of radiation therapy and some forms of chemotherapy, and can cause kidney damage.

Recently published research from the University of Otago found that some types of tumour were less able to accumulate vitamin C compared with healthy tissues ...“and that this related to the ability of the tumour to survive and grow”. However, this work was carried out on tissue, not people, and whilst interesting in terms of increasing our knowledge, it is wrong to claim based on this research that high-dose vitamin C can help people with cancer, or that this is proof of the effectiveness of vitamin C, as a number of media reports and vitamin C proponents have claimed.

The hype continued when in August of 2010, popular New Zealand TV current affairs shows reported a case of a man who was in all likelihood about to die from swine flu. His family insisted that he receive high-dose vitamin C and they eventually got their wish after using legal threats. These threats were made after doctors refused to administer it on the basis that there was no good research evidence that it would help.

The man went on to make a remarkable recovery and the result is likely to be that, based on this single case, seriously sick patients and their relatives are going to demand high-dose vitamin C in the future. This is already happening—an oncologist told me that 7 patients who attended a recent clinic asked about receiving intravenous vitamin C. Perhaps more importantly, the hype is giving unjustified false hope to vulnerable patients and relatives. Optimism whilst dealing with a serious illness is beneficial, but unrealistic expectations can be harmful.
It is possible that future studies may find high-dose vitamin C to be an effective and safe treatment for people with serious illnesses, including cancer, and that previous trials have not shown a benefit because they have, for example, used the wrong dose or method of delivery. If it did work, it would be very easy to demonstrate this in clinical trials and there would be no shortage of willing participants. But the evidence currently available tells us that it almost certainly does not help and there is a real chance of harm.

High-dose vitamin C is not recommended for any condition and the current media hype is unjustified and unhelpful.

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References: