

Doctors often misdiagnose zinc deficiency, and unaware of impact of excess zinc

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Doctors often misdiagnose zinc deficiency, and seem to be unaware of the impact of excess zinc on the body, shows a small audit of clinical practice, published online in the *Journal of Clinical Pathology*.

Too much [zinc](#), taken in the form of [dietary supplements](#), may disrupt copper uptake, leading to neurological problems and anaemia, the evidence indicates.

Zinc is an essential trace element that is required in daily quantities of 5.5 to 9.5 mg for men, and 4 to 7 mg for women. But zinc supplements are usually only available in formulations of 45 or 50 mg. The US recommended tolerable limit is 40 mg/day.

While there is no evidence to suggest that taking zinc supplements in the short term is harmful, this may not be the case for longer term use, say the researchers.

They analysed the case notes of 70 patients prescribed zinc supplements at Glasgow hospitals between 2000 and 2010.

In particular, they looked at the reasons for advising this treatment, whether the patients' family doctors (GPs) had been warned about the potential impact of high doses of zinc, the duration of treatment, and the development of anaemia or neurological symptoms.

The data included lab test results, where available, for levels of zinc,

copper, and albumin—one of the main proteins found in blood—plus C reactive protein (CRP).

Low levels of albumin (below 25 mg/l) are linked to low zinc levels as are high (above 20 mg/l) levels of CRP.

Information on the doses and formulations of [zinc supplements](#) were available for 52 patients. The reason for prescribing zinc was not recorded in 29 cases, of the remainder, the supplement was prescribed to correct [zinc deficiency](#) in 21 cases (43 percent).

Zinc supplementation was prescribed for skin healing of conditions, such as pressure sores or leg ulcers in a further 19 cases (38 percent), for poor nutrition in 4 cases (8 percent), to support alcohol withdrawal in one, and for hair loss (alopecia) in another.

Zinc levels were measured before prescribing in over half of all 70 cases (43; 61 percent). This was low in 37 patients, and thought to have been caused by low albumin or high CRP in 28 (76 percent).

Yet copper level was only assessed in two patients. And 60 percent (45) of patients were prescribed zinc at doses of 90 to 180 mg/day, say the researchers.

In most case notes (94 percent) no further information on zinc was recorded, so it was hard to assess how long the supplement had been prescribed for. But only one set of case notes revealed that the patient's family doctor had been warned about the potential consequences of long term use.

Thirteen patients developed anaemia, a low white cell count (neutropenia), and/or [neurological symptoms](#), all of which are typically associated with zinc induced [copper deficiency](#), say the researchers.

In six, these diagnoses pre-dated zinc prescription. Of the remaining nine, five [patients](#) variously had peripheral nerve pain (neuropathy), tingling in their fingers (paraesthesia), difficulties with balance and coordination (ataxia), and leg nerve pain.

"These findings underline the lack of awareness of zinc induced copper deficiency," write the researchers, who caution: 'zinc is an essential trace element, and so clinicians may consider it a safe nutrient rather than a drug carrying potential risk.'

More information: The risk of copper deficiency in patients prescribed zinc supplements, *Journal of Clinical Pathology*, [DOI: 10.1136/jclinpath-2014-202837](#)

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