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Severe Anemia and Copper Deficiency in Patient with Hidradenitis Suppurativa

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A 47 year-old morbidly obese male with a history of end-stage renal disease and hidradenitis suppurativa (HS) presented to the emergency department with weakness, fatigue, and shortness of breath on exertion. Routine laboratory workup revealed severe anemia, with a hemoglobin (Hb) of 5.5 g/dL (baseline: 9.6 g/dL). He received one unit of packed red blood cells with improvement in Hb. Five weeks later, he presented for dialysis and was again found to have profound anemia, with a Hb of 6.8 g/dL. Workup for anemia revealed a ceruloplasmin of 3 mg/dL [16-31] and a serum copper of 10 µg/dL [72-166]. A bone marrow biopsy and peripheral blood smear ruled out myelodysplastic syndromes and microangiopathic hemolytic anemia. The patient disclosed that he had been taking 100mg of over-the-counter chelated zinc daily for the past six years in an effort to treat his HS. He was advised to discontinue the zinc supplements and was started on a four-week regimen of copper glycinate 2mg. One month later, his Hb had improved to 9.3 g/dL.

Zinc supplementation is a common adjunct therapy for HS generally perceived to be relatively benign with minimal side effects.¹ However, zinc supplementation can cause copper deficiency anemia secondary to decreased intestinal copper absorption, as seen in our case.² Providers should be aware of this potentially serious adverse effect when prescribing zinc supplements or treating patients with HS. We advise that providers monitor hemoglobin levels in patients on chronic or high-dose zinc supplements and prescribe copper-enriched zinc if indicated.

References:

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2. Duncan A, Yacoubian C, Watson N, Morrison I. The risk of copper deficiency in patients prescribed zinc supplements. *J Clin Pathol.* 2015;68(9):723-725. doi:[10.1136/jclinpath-2014-202837](https://doi.org/10.1136/jclinpath-2014-202837)