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Reference range of serum zinc concentration in patients with heart failure: A systematic review and meta-analysis of cross-sectional studies in the 21th Century.

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Background:

Heart failure (HF) is a clinical disorder and zinc is an important cofactor in regulating oxidative status. Objective: The present study aimed to determine the mean concentration of serum zinc in patients with HF. Methods: PubMed, Embase, Scopus and Web of Science were searched to find relevant cross-sectional studies up to 1st January 2020. A random-effects model was used to pool the effect size (ES) and 95 % confidence intervals (CI). Meta-regression analysis was performed to find the sources of statistical heterogeneity among the studies.

Results:

Our meta-analysis of 1358 HF patients indicated that their mean serum zinc concentration was 66.24 µg/dl (95 % CI: 59.16, 73.33). In sub-analysis, the mean concentration was 75.04 µg/dl and 52.90 µg/dl in patients < 65 years and > 65 years old, respectively. Subgroup analysis by geographical region showed that mean serum zinc was 70.70 µg/dl, 69.08 µg/dl and 60.91 µg/dl in HF patients from Europe, America and Asia, respectively. Meta-regression analysis indicated a reduction of 1.42 µg/dl in serum zinc for each year aged. Conclusion: In summary, our meta-analysis indicate that serum zinc concentrations have a narrow range in HF patients' worldwide, that declines with age and varies with geographical region.

Biography:

Jalali is an Iranian nutritionist, has a traditional medicine certificate from Shiraz University of Medical Sciences with score 100. He is a member of Nutrition Research Center of Shiraz University of Medical Sciences, Iran and specifically working on functional foods and nutraceuticals that may improve various metabolic disorders, and has obtained significant outcomes regarding important biomarkers.

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