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Case Report

Serum Porcelain Levels Identify Patients with Subtle Allergies

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Abstract

Background. Numerous patients have complaints of pruritic rash, associated with varying other symptoms, such as tachycardia, palpitations, and tremors. It has been difficult to diagnose those patients with these symptoms resulting from allergies from those whose symptoms have other causes, such as fatigue, restlessness, or ennui. In preliminary experiments using an animal model, we obtained data that showed absorption from water dishes, while drinking water, of the surfaces of these dishes. Serum porcelain levels were obtained and correlated with decreased RRT (rat running times) through a maze. In follow up experiments injected trace porcelain, at a dose of 10 ug/ml demonstrated a dose dependent increase in RRT. With excessive doses, approaching 100 ug/ml did not result in further decrease in RRRT but did result in transient rash, visible through the rat fur. In contrast, control animals injected with the allergen ragweed, demonstrated a similar rash, that persisted for 24 hours. We then studied human patients presenting with pruritic rash.

Methods. We prospectively studied 100 patients with rash: 50 patients with known allergies (A group), compared to 50 age matched patients with no history of allergies (NA group). Both groups (mean age 42.7+0.2 yrs) had comparable frequency of tachycardia (n=20 group A, 20 group NA), palpitations (n=2 group A, 3 group NA), and tremors (n=50, both groups). Serum porcelain levels, in addition to CBC, CMP, ESR, were obtained. Because of sample size, instead of Kohen's kappa statistic, the related non-parametric Cohen's kappa statistic was used.

Results. There was no significant difference between the two groups for CBC, CMP, or ESR. However, serum porcelain levels were 10.3+5.6 nmol/L for group A; group NA had levels of 56.4+1.1 nmol/L.

Conclusion. Serum porcelain levels provide a promising method to identify patients with pruritic rash and related symptoms, resulting from fatigue, restlessness, and, in particular, ennui, from those resulting from allergies. Further studies with larger sample size, using a randomized control design, are needed to verify these results.