Do shrimp-allergic individuals tolerate shrimp-derived glucosamine?

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Abstract

BACKGROUND:

There is concern that shrimp-allergic individuals may react to glucosamine-containing products as shrimp shells are a major source of glucosamine used for human consumption.

OBJECTIVE:

The purpose of this study was to determine whether shrimp-allergic individuals can tolerate therapeutic doses of glucosamine.

METHODS:

Subjects with a history of shrimp allergy were recruited and tested for both shrimp reactivity via a prick skin test and shrimp-specific IgE by an ImmunoCAP assay. Fifteen subjects with positive skin tests to shrimp and an ImmunoCAP class level of two or greater were selected for a double-blind placebo-controlled food challenge (DBPCFC) using glucosamine-chondroitin tablets containing 1,500 mg of synthetically produced (control) or shrimp-derived glucosamine. Immediate reactions, including changes in peak flow and blood pressure, and delayed reactions (up to 24 h post-challenge) via questionnaire were noted and assessed.

RESULTS:

All subjects tolerated 1,500 mg of both shrimp-derived or synthetic glucosamine without incident of an immediate hypersensitivity response. Peak flows and blood pressures remained constant, and no subject had symptoms of a delayed reaction 24 h later.

CONCLUSION:

This study demonstrates that glucosamine supplements from specific manufacturers do not contain clinically relevant levels of shrimp allergen and therefore appear to pose no threat to shrimp-allergic individuals.