

Carbohydrate Allergens – How Clinically Relevant?

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Clinicians and academics are constantly challenged to discover 'new' concepts in our understanding of disease with the ultimate hope to improve diagnostics and management of disease. In the field of allergy, one example is the changing concept of carbohydrates as allergens. Carbohydrates have been considered weak allergens of little clinical significance. These cross-reactive carbohydrate determinants (CCD) result in non-specific cross reactivity between allergens leading to false positive *in-vitro* IgE testing. This long accepted dictum has been challenged with more recent reports of carbohydrate allergenic epitopes resulting in anaphylactic allergic food reactions. The carbohydrate galactose-alpha-1,3-galactose (alpha-gal) which is the epitope in red meat allergy and cetuximab anaphylaxis has been well described in populations residing in the United State and Europe. Closer to home, anaphylaxis to the prebiotic, galacto-oligosaccharide, present in infant and maternal milk formula has been described in the South East Asian population and Japan. This latter allergy is peculiar in that the allergen is a pure carbohydrate. The distinct geographical distribution of these allergens point to a primary sensitizer that is unique to the region. These recent observations parallel the rising trend in food allergies. It is possible that the environmental influences that are responsible for our diminishing gut tolerance and increasing prevalence of food allergy, is also responsible for recent recognition of allergic reactions to carbohydrates. If so, this may signal our propensity to develop new environmental allergies.