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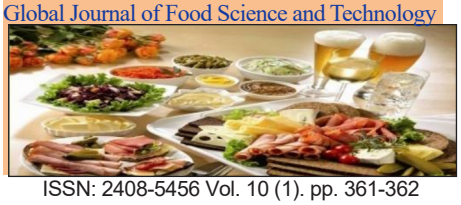

Short Communication Open Access

ISSN: 2408-5456 Vol. 10 (1). pp. 361-362
February, 2022

Food additives and bioactive food chemicals management in food intolerances

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Received: 01-Feb-2022, Manuscript No. GJFST-22-57077; **Editor assigned:** 03-Feb-2022, PreQC No. GJFST-22-57077(PQ); **Reviewed:** 17-Feb-2022, QC No GJFST-22-57077; **Revised:** 21-Feb-2022, Manuscript No. GJFST-22-57077(R); **Published:** 28-Feb-2022, DOI:10.15651/2408-5456.22.10.045.

FOOD ADDITIVES AND BIOACTIVE FOOD CHEMICALS

Thousands of different food additives are used throughout the food industry for different functions. In particular, it is used to store foods and improve their taste and appearance. These are usually synthetic and natural substances that cannot be consumed as food. Food additives are categorized according to their function and characteristics, such as preservatives, flavors, emulsifiers, thickeners, moisturizers, hardeners and seasonings. A few additives are associated with IgE-mediated or other immunological or non-immunological side effects.

Low food chemical diets include limiting a wide range of bioactive food additives and preservatives that occur naturally or are artificially added to foods. The low food chemistry diet, also known as the "elimination diet," was originally conceptualized by the Royal Prince Alfred Hospital Allergy Unit in Sydney, Australia (Swain et al., 2009), and although there are no controlled study data, it is said to reduce gastrointestinal symptoms. Although some food composition data is available, the food chemical content of foods can be affected by growing conditions, storage, food preparation, and cooking methods. For example, in a study of food salicylic acid levels, unpeeled Pink Lady apples had salicylic acid levels of 9.0 mg/kg, while peeled Pink Lady apples had levels of 2.9 mg/kg (Malakar et al., 2017). This indicates that a significant portion of salicylic acid content is present in the skin, which is an important observation for clinical practice. Other factors can change the level of food chemicals, such as storage time and cooking time.

Similar to "elimination diet", other dietary therapies are low in food chemicals and used worldwide, although they are poorly studied. For example, 'The Feingold Diet' was designed in the 1970s, to reduce Attention Deficit Hyperactivity Disorder (ADHD) in children eliminated artificial sweeteners, colours and preservatives from the diet but one re-challenge study using food colouring was unable to show an effect. "A Few Foods diet" excluded all five foods except 5 or 6 (for example, lamb, potato, rice, rice, pear, one of pears, tap water), the intractability of children in the study Reducing atopic dermatitis. Of course, the use of such diets is evaluated for their use of such diagnostics in both their efficacy (digestive and stretchability) and the ability to maintain nutrition during implementation. Many studies are needed. Unfortunately, there is a lack of research to evaluate different nutrition in foods that can have potential fatal reactions like steroid-dependent asthma. As research and community interest in the role of nutrition in the treatment of disease grows, funding and access to further nutrition research in this area may be easier to access.

Food Additives and Chemical Induced Response

The prevalence of self-reported symptoms to food additives has been reported to be 0.01%-0.23% in adults, and a provocative study found a prevalence of 2%-7% in atopic children. Limited evidence comes primarily from case studies or small, poorly controlled challenge studies conducted in patients with asthma or chronic idiopathic urticaria/angioedema. Food additives and

chemicals are thought to contribute to both Irritable Bowel Syndrome-like (IBS-like) gastrointestinal symptoms and extraintestinal symptoms such as urticaria, headache, eczema, rhinitis, nasal congestion, and post-nasal drip (Barrett et al., 2012). No controlled studies of diets with full chemical-restricted diets in patients with gastrointestinal disorders have been published, and data on other symptomatic responses are limited. Small studies are investigating the effects of individual food chemicals. In a small study of patients with a dual diagnosis of fibromyalgia and Irritable Bowel Syndrome (IBS), 4-week dietary exclusion of glutamate reduced sign symptoms by more than 30% of symptoms in 84% of patients (Holton et al., 2012). The prevalence of GI symptoms after taking high doses of salicylate from aspirin and other nonsteroidal anti-inflammatory drugs in asthmatic patients ranges from 10%-20% and 0.6%-2.5% in the general population. However, it is unknown how this translates into the relatively low doses seen only from dietary sources. It is also unknown whether hypersensitivity to one food chemical is likely to be sensitive to other types of food chemicals.

Diagnosis and Management of Food Additive and Chemical Sensitivity

There are no diagnostic tests available to assess susceptibility to food additives or chemical sensitivity. Despite the lack of efficacy data, low chemical diets are used in clinical practice. Like other exclusion diets, low-chemical diets are used as the first short-term (2-6 weeks) restriction, followed by strategic re-challenge to assess tolerance to each food chemical. Each food chemical is usually re-challenged at gradually increasing doses over a 3-day period (Malakar, 2017). Some chemicals, such as dietary salicylate, need to be challenged for a longer period of time (up to 10 days), as it may require gradual build-up over several days to elicit a symptomatic response. Due to the large number of food chemicals, the re-challenge process can be lengthy and lead to long-term use of a low chemical diet. Patients during the initial restriction and re-challenge period of dietitian surveillance are essential, especially when used in pediatric patients (Gray et al., 2013), as concerns have been raised about the restrictive nature of the diet and potential negative consequences on nutritional adequacy.

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