

Impact Of Dietary Measures In Autoimmune Diseases

Nasim Karim

The immune system of an individual upon activation by antigens produces response to pathogenic microorganisms their products and to body self-antigens. The latter being known as “Autoimmune Response.” Lymphocytes as T cells and B cells as well as macrophages take part in this response. The T- cells are responsible for releasing lymphokines, B - cells for producing antibodies or immunoglobulins while macrophages bring about the processing of antigens to immunogenic units of the body. Thus autoimmune diseases are characterized by response of immune system to one’s own tissues and organs and is hence abnormal. At present about eighty different types of autoimmune diseases are described¹. They include rheumatoid arthritis, systemic lupus erythematosus, type-1 diabetes, celiac disease, Graves' disease, Sjogren syndrome, inflammatory bowel disease, multiple sclerosis, psoriasis etc².

Globally the incidence and prevalence of autoimmune diseases have enormously increased in the last thirty years³. Exact etiology of these diseases is yet not clear. Some diseases run in families like systemic lupus erythematosus while others may be triggered by infections, environmental and nutritional factors. Environmental factors are said to have more influence than genetic ones on the development of these diseases. Somehow it is documented that women are more commonly affected in comparison to men. In early part of 1900 first description of autoimmune diseases was put forward. The pathological characteristic features of these diseases are damage to tissues and their destruction, alteration in organ growth and function secondary to production of autoantibodies, which are capable of maintaining their production once the process is initiated. Blood vessels, RBCs, joints, connective and muscles tissues, thyroid, pancreas and skin are the common culprits. Tiredness and low-grade fever are among common features observed in patients suffering from such diseases⁴.

Although non-steroidal anti-inflammatory drugs (NSAIDs) and immuno-suppressant drugs are the main stay of treatment with use of intravenous immunoglobulin also but treatment is tailored depending upon the type of disease and severity at the time of presentation. These agents tend to improve the features of patients with no cure till date. For this reason researchers and scientists have been working on the insights of ecological and nutritional solutions along with life style

changes as a paradigm shift, to control and or reduce the morbidity and mortality associated with such diseases. Provision of healthy diet, BMI within the specified range, proper sleep and exercise and stress reduction are very beneficial in such patients⁵.

In diet some foods needs to be avoided completely like sugar including the artificial sweeteners, fats (trans or hydrogenated), alcohol, food additives and preservatives, caffeine, corn syrup with high fructose content, junk, fast and processed food. Gluten, dairy, legumes, corn, soy, eggs, nightshades (tomatoes, peppers, potatoes, and eggplant), citrus, yeast etc. should also be avoided as they contribute to inflammatory process⁶. Gluten causes release of zonulin in small intestine leading to opening up of tight junctions in gut and creates leaky gut which is precursor of autoimmunity. Besides gluten is structurally similar to many tissues in our body like thyroid gland and promotes molecular mimicry phenomenon. In dairy and its products, casein, hormones and antibiotics are present which exacerbates autoimmune diseases. Lectins and agglutinins found in grains and legumes are similar to gluten in behavior. Genetically modified form of corn and soy is mainly available now-a-days and is linked to exacerbation of at least 22 autoimmune diseases. Isoflavones present in soy are responsible for producing estrogen dominance^{7,8}. Egg white contains lysozyme that promotes leaky gut. Alkaloids are present in potatoes, eggplant, tomatoes etc. These vegetables are called Nightshades and contribute to inflammatory process in autoimmune diseases. Citrus fruits are packed with histamine which stimulates our immune system to produce response where as yeast promotes candida overgrowth in gut therefore both of these should be avoided⁹. It is recommended that whenever possible organic products should be preferred for use as they are rich source of nutrients as well as antioxidants and at the same time they have low content of pesticides¹⁰.

Five components must be made essential part and parcel of meals and food intake.

(1) Meat must be included in diet but of high quality for provision of plenty of amino acids. Organic, grass-fed, animal’s meat should be preferred for use as genetically engineered organisms - feed and spray of pesticides on animal feed does not provide us with quality proteins which the body requires to combat diseases specifically the autoimmune diseases.

(2) Half of any meal must be composed of green leafy vegetables including kale, spinach, broccoli, cauliflower, zucchini, asparagus, beets, sweet potatoes and squash etc. They contain rich amount of fiber, calcium and micronutrients and have natural detoxifying properties.

Nasim Karim

Professor and Head, Pharmacology Department
Bahria University Medical & Dental College, Karachi.
Email: nasimkarim.bumdc@bahria.edu.pk

Received: 23-11-18

Accepted: 12-12-18

(3) Fruits are rich source of vitamins, potassium, and folate. They contain fiber, help good bacteria in the gut and control constipation. Some fruits such as berries (raspberries, blackberries, blueberries, and strawberries) have low sugar content with excellent antioxidant ability.

(4) Healthy fats are essential component of balanced and healthy diet. They repair the cells lining the GIT, promote absorption of fat-soluble vitamins (A, D, K, and E) and provide satiety feeling. Trans fats and seed oils produced by industries like canola, soy and corn oil must be avoided while avocado, coconut and olive oils and animal fats that make the good fats should be made essential component of diet¹¹.

(5) Spices such as turmeric, ginger, cinnamon, cayenne pepper, cloves, garlic etc. are also helpful in controlling the inflammatory component tagged with autoimmune diseases. Leaky gut characterized by loss of epithelial lining integrity in intestinal tract as mentioned above triggers the initiation and development of autoimmune diseases. Fermented foods, unsweetened yogurts, coconut kefir and pro-biotic supplements are greatly beneficial in leaky gut condition that can also be controlled by whole foods and plant based dietary recipies¹².

Among non-pharmacological approaches dietary measures act as strong armor and exert profound impact on the quality of life of patients having autoimmune diseases. Thus body can be empowered by foods to fight and control autoimmune diseases. Dietary measures can be a powerful tool for fighting excessive inflammation associated with autoimmune diseases and can make these patients feel better and heal their bodies.

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