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A REVIEW ON THE SIGNIFICANT DIETARY PRACTICES IN IRRITABLE BOWEL SYNDROME

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Encouraging healthy dietary habits and positive lifestyle factors are undeniably the most substantial non-pharmacologic factor for the deterrence and management of causative aspects of irritable bowel syndrome. The ingestion of probiotics in right ratio and curtailing certain foods has posed encouraging favourable impacts on the gut health and worthy living. Accordingly, this article reviews the importance of probiotics and low FODMAP diet that nurtures the prime concerns to be reflected by the experts in the exploration of dietary trials as alternatives for patients affected with irritable bowel syndrome.

Keywords: IBS, Probiotic, FODMAP, Dietary habits, Gasro

INTRODUCTION

The gastrointestinal tract is the longest and the largest area, approximately 7 m in length, encompassing 300 m^2 surface area in adults, interlocking various organs that are involved in bio-conversion, absorption and utilization of nutrients from the food, thus providing nourishment to the entire body. More than 1000 species of microbial flora are present in the human large intestine, the most common strains being *lactobacilli, bifido bacterium, streptococci* and *saccharomyces*. The dawn of the role of food and microbes in the gut though dates back to million years ago, feasting on more of unhealthy, refined, calorie dense, junk foods without roughage in recent times have drawn all over again the insights into the micro biota of the human G.I system.

The list of Gastro intestinal diseases being Gastroesophageal Reflux Disease (GERD), Irritable Bowel Syndrome (IBS), Gall stones, Celiac disease, Crohn's Disease, Haemorrhoids, and Diverticulitis, Irritable bowel syndrome is a common gastrointestinal disorder affecting approximately 10-15% of the world population, mostly women and children for which the treatment is utterly diet-centric.

According to The Rome III diagnostic criteria IBS is defined as the condition with recurrent abdominal discomfort or pain for at least 3 days/month, for a period of 3 months, with symptom onset at least 6 months prior to diagnosis, associated with two or more of the following:

a) Improvement with defecation

b) Onset associated with the change in frequency of stool

c) Onset associated with change in form/appearance of stool

PREDISPOSING ELEMENTS FOR IBS

- Dietary Allergies or Food Sensitivities
- Stress
- Anxiety/Depression
- Recurrences of Gastroenteritis

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- Small Intestinal Bacterial Overgrowth
- Genetic

SYMPTOMS

The symptoms involve an anomalous infirmity of gut motility with amplified gut feelings accompanied by abdominal pain, loss of appetite, abdominal discomfort, flatulence, bloating, stools with mucous, and Irregular Bowel Habits with Constipation (IBS-C)or watery stools (IBS-D)or alternating episodes of diarrhoea and constipation (IBS-A).

MANAGEMENT OF IBS

IBS management involves a multiple interlinked factors like diet, lifestyle intervention, counselling and medications (Chey, 2008).

DIET

The change in food consumption styles, due to transformation of life style of women has led toa striking home and work imbalance. This has made them to concentrate less on food preparations and the tendency to purchase readily available, ready to eat, ready to serve, processed and packed food products is steadily increasing. As a result of which, the intake of freshly prepared fermented food products consumption has declined. This has headed to origin of many G.I diseases (Arivuchudar and Nazni, 2017).

A well balanced diet with nutrients from all the food groups and non-nutritional factor like fibre in right proportions will aid in maintaining a normal G.I. system. In addition, the presence of favourable microbial mass helps to enhance the functions of gut. Avoidance of foods that trigger the symptoms of IBS is also a must and formulation of personalised diet is mandatory.

Probiotics

The diet rich in probiotics, a group of beneficial microbes found in many of the traditional diets have proved successful in alleviating IBS. The following table presents the list of various genuses of microbes and their species proved to be probiotics, their food sources and function in managing IBS.

Table 1: Important Probiotics in IBS Management and their Food Sources

Genus/Species	Strain	Functions	Food Sources
Lactobacillus	*L.acidophillus*	Reduces the symptoms of IBS	Koozh, Lassi, yogurt, Bhatooru, marchu, chilra
	L. rhamnosus	Reduces abdominal pain	Yogurt, semi-hard cheese Parmigiano Reggiano cheese
		Improves immunity	
	L.plantarum	Prevents IBS	Appam, Dosa, Curd, Rabdi, Babru, Enduri Pitha, Gundruk, Sinki, Ngari, Mesu, Sauerkraut, Tungtap
	L.casei	Prevents constipation	Sour rice, Gundruk, sauerkraut, pickles, yogurt, cheese
	L.salivarius	Improves IBS	Naturally present in mouth and small intestine, Found in tomatoes, banana, garlic, artichoke, asparagus
Bifido Bacterium	*B.bifidum*	Reduces IBS	Healthy colon, Breast milk, yogurt, sausage and cured meats, wine, vinegar
	B.infantis	Regulates bowel movements	Yogurt, Cheese, gut of infants
		Decreases bloating	
		Supports normal micro flora	
Streptococcus	*S.salivarius*	Reduces IBS	In oral mucosa
Saccharomyces	*S.boulardii*	Prevents IBS and IBD	Kefir, Kombucha

Note: * Milk Products to be prepared from lactose free milk.

Low FODMAP Diet

FODMAP, the acronym for Fermentable Oligosaccharides, Disaccharides, Monosaccharides and Polyols is a pool of particles in food, which are poorly absorbed by people with poor gastrointestinal functioning. The oligosaccharides namely fructans and galactooligosaccharides (GOS), Disaccharides viz. lactose in milk, Monosaccharides like fructose and the Polyols like sorbitol and mannitol are not readily absorbed by Small Intestine leading to the symptoms of IBS.

Hence a diet low in FODMAPs developed in Australia is promising in treating and managing IBS. The three stages of a Low FODMAP diet include:

1) Elimination Stage: In this phase, for a duration of 2-6 weeks, the foods listed in the table below as Foods with High FODMAPS are to be eliminated and barter with low FODMAP foods.
2) Re-challenge Stage: In this stage the foods are reintroduced back into the patient's diet in a systematic way within a time frame of 6-8 weeks to identify the FODMAP foods that trigger the symptoms of IBS.
3) Personalised Diet Plan Stage: This includes establishing a long term personalised FODMAP diet plan.

LIFE STYLE INTERVENTION

A calm, stress free life with periodic aerobic exercises like walking, jogging, cycling help relieve stress. The awareness on Yoga and laughter therapy is also on steady raise and is providing a helping hand to overcome stress.

MEDICATIONS

- Antidepressants: Show a positive impact on patients with IBS.
- Rifaximin: Non-absorbable antibiotic ease bloating and used for short term treatment.
- Amitiza: Drug which helps in treatment ofIBS–C.

Table 2: High/Low FODMAP Food List

Food Group	Low FODMAP Foods/Include	High FODMAP Foods/Avoid
Cereals	Rice, Oats, Quinoa	Wheat, Barley, Rye (Gluten)
Legumes	Moong dal	Chick pea, Soy, Dried beans (Galactans)
Milk	Dairy Products prepared from lactose free milk, camembert and cheddar cheese, yogurt, buttermilk	Cow, goat, sheep milk and milk products (Lactose) and soy milk (Galactans)
Meat	Goat, Lamb, Beef, Poultry, Eggs	- -
Fruits	Banana, Tomato, Lemon, Pineapple, Grapes, Orange, Blue berries	Apples, Cherry, Fig, Mango, Watermelon, Litchi, Pears, Tinned fruits, Dried fruits (Fructose)
Vegetables	Carrot, Capsicum, Brinjal, Green beans, Potato, Pumpkin, Radish, GLV	Asparagus, Artichokes (Fructose)
		Beetroot, Garlic, Onion, Peas, Corn (Fructans)
		Cauliflower, Mushroom, Sweet Potato (Polyols)
Nuts	Coconut, Sesame, Peanut, Pumpkin seeds, sunflower seeds, walnut	Cashew, Pista (Fructans)
Sweeteners	Sugar, Sucrose, Maple syrup, Sucralose	Honey, Fructose, High Fructose Corn Syrup (Fructose)
		Sorbitol, Mannitol, Xylitol (Polyols)
Others		Wine, Rum (Fructose)
		Caffeine

Source: As Well As Wellness Centre (2015)

- Lotronex: Used in the treatment of IBS-D.
- Hyoscine, Cimetropium and Peppermint Oil: Anti spasm treatment for abdominal pain.

CONCLUSION

The patients often hesitate to share the signs and symptoms of any gastrointestinal diseases as well IBS in particular.The treatment can prove efficacious only if the co-operation is extended to the doctors. The studies have proven that low FODMAP diet is successful if the patient is determined and has the perseverance to follow till the symptoms disappear. Hence, the Patient – Doctor-Dietician team approach is the only prolific way to manage IBS.

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