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Probiotics: A New Revolution of Body Immune System

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Short Commentary

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INTRODUCTION

Probiotics are the live microorganisms, which causes health benefit for the host in which it is administered, particularly for digestive system and keeping the gut healthy [1]. It helps to suppress the growth or epithelial binding by pathogenic bacteria. It regulates the immune system. Probiotics are usually eaten in yoghurts and are often described as "friendly bacteria". Yogurt is the most natural and healthy probiotics [2]. Probiotics are generally available in the form of dietary supplements and foods. Along with this probiotics can be used as complementary and alternative medicine [3]. Probiotic are mainly used in developing countries due to the health benefits [4].

There are three ways to change intestinal micro flora [5]

1. Administration of antibiotics
2. Prebiotics (are dietary compounds which enhance the growth and activity of metabolic bacteria)
3. Probiotics (Probiotics are the live microorganisms beneficial for health)

Probiotic Function Mechanism:

It includes barrier function like as we know probiotics are effective in influencing many components of epithelial barrier function either by increased mucin production or by decreasing apoptosis of intestinal cells. Probiotics are also helpful in Production of antimicrobial substances, for example: Defensins (hBD protein) and cathelicidins are the antimicrobial peptides expressed constitutively by the intestinal epithelial cells and display antimicrobial activity against wide variety of microbes. Probiotic bacteria are competing with invading pathogens for binding sites to epithelial cells and the overlying mucus layer in a strain-specific manner [6]. Probiotics also helps in modulation of Immune system [7]. They are also having Interference with quorum sensing signaling.

Probiotics counter experimental and human gastrointestinal inflammation (human inflammatory bowel disease) by their effects on epithelial cell function, which includes epithelial cell barrier function, epithelial cytokine secretion, and their antibacterial effects relating to colonization of the epithelial layer. Along with this, there is emerging evidence that probiotics induce regulatory T cells that act as a break on the effector T cells that would otherwise cause inflammation.

Benefits of Probiotics:

Probiotics are useful to ease the symptoms other than digestive problem, i.e: Eczema, preventing allergies & cold, oral health. Major benefits of probiotics include: Digestive Health; Urinary Health; Allergies; Women's Health; Immunity; Obesity [8]. Probiotics are used for reducing long intestinal transit [9]. Probiotics are useful for colon carcinogenesis [10].

Generally there are two types of Probiotics used for maintaining health: Lactobacillus, Bifidobacterium. Along with this some yeasts and bacilli are also used as probiotics [11].

Probiotics and fermented milks products which contain lactic acid bacteria are used for cancer prevention [12]. Probiotics having anti carcinogenic property [13]. For the dairy-cereal products, probiotic fermentation increases nutritional content and reduces antinutrients content [14]. Lactobacillus plantarum probiotics are used for the production of Vitamin B2 [15]. Probiotics B. thermophilum RBL67

is used for the prevention and treatment for Salmonella infection [16]. 'Doogh' is one of the natural probiotic for human nutrition and health along with food-producing commercial poultry [17]. Probiotics sources of methionine are uses a nutritional supplementation for organic poultry [18]. Probiotic Bifidobacterium longum CECT 7347 having effect in reducing toxicity and Inflammatory Potential of Gliadin-Derived Peptides [19]. Bacillus bacterias are very useful as probiotics [20].

Probiotics having effect in various diseases like:

- antibiotic-associated diarrhoea (AAD) [21]
- Irritable bowel syndrome [22]
- Inflammatory bowel disease
- Vaginal Infection
- Celiac disease [23]
- Cancer [24]
- Gastrointestinal disease [25]

Side Effects of Probiotics:

Sometimes there may be some side effects also related with the probiotics like upset stomach, diarrhea, gas, blotting or some allergic reactions. Researchers have found that consumption of mixture of more than six probiotics can increase the death rate of patient. People who are very young and those having damaged immune system, for example people having HIV or a terminal illness can cause lethal disease by the consumption of probiotics.

Probiotics are in two forms: Live culture probiotics or dormant. Before using probiotics we have to choose them.

CONCLUSION

This commentary is on a brief idea about probiotics and their benefits on human health and wellness along with this probiotics are very effective in treating various types of disease. But still there is a need in discovering various other benefits of probiotics in our day to day life.

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