EDITORIAL

The short-term impact of probiotic intervention on the human gut microbiome facilitate fermentation potential of indigestible Carbohydrates to short-chain fatty acids for preventing and treatment of obesity

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INTRODUCTION

Probotics are the living microorganisms stimulated with allege that they provide health benefits when they are consumed, substantially by improving or restoring the gut flora. Probiotics are generally considered as safe to consume, but may cause interactions between bacteria-host and causes unwanted side effects in rare cases.

Though probiotics are considered safe, in certain cases some people have doubts about their safety as those with immunodeficiency, short bowel syndrome, central venous catheters, and cardiac valve disease, and premature infants, may be at higher risk for undesirable effects. There is a risk exists for the passage of viable bacteria from the gastrointestinal tract to the internal organs as a consequence of bacteremia in severely ill people which can cause harmful effects. People with inflammatory bowel disease, Rarely, consumption of probiotics by children with lowered immune system function or who are already critically ill may result in bacteremia or fungemia (Presence of bacteria or fungi in the blood), that leads to sepsis, which is apotentially fatal disease

DISCUSSION

Human gut microbiome does play an important role in our health. It affects our metabolism and can be linked to obesity. Obesity and its associated risks like type 2 diabetes (T2D) are extending epidemic stages. The two main contributing factors are increased food intake and lack of exercise. Unique features of gut microbiome in terms of ecological patterns, microbial composition and metabolism in obese patients. The assignment of novel microbiota biomarkers obesity could unlock opportunity for the development of patient-tailored treatments dependent on age-related human microbiome shapes. The alterations on the human gut microbiota (induced by antibiotics or dietary supplements) have shown that obesity is associated with a reduction in Gram-negative bacteria, specifically members of the Bacteroidetes, and an increase in Gram-positive Firmicutes. Variation in the ratio of Bacteroidetes and Firmicutes constrains a change in fermentation signature that could explain weight gain. The microflora occupied in the human gut has been found to be one of the influential factors disturbing energy balance. In addition it serves as a nutrient enhancer, L-tryptophan (Trp) plays crucial role in the balance between intestinal immune tolerance and gut microbiota maintenance. Recent discoveries have underscored that changes in the microbiota regulate the host immune system by balancing plasma concentrations of tryptophan, an essential amino acid and precursorto serotonin, an essential neurotransmitter within both the enteric and central nervous systems Indirectly and through as yet unknown mechanisms, the gut microbiota exerts control over the hypothalamic-pituitary-adrenal axis Obesity arises when energy intake and energy expenditure are out of balance.

Role of probiotics in gut health

Probiotics can regulate the immune system in the intestine through the luminal conversion process. Secreted soluble factors and metabolites, such as short-chain fatty acids (SCFAs) and vitamins utilizing substrates from the diet are produced from the bacteria .Adding a prebiotic or probiotic supplement in your diet may be an incredible way to improve your gut health. Prebiotics supply "food" indicate to promote the growth of beneficial bacteria in the gut, whereas probiotics are live bacteria. People with bacterial overgrowth, suchas Small Intestinal Bacterial overgrowth (SIBO), should not take probiotics.

The treatment for minor dehydration that is often considered the most effective is drinking water and stopping fluid loss. Plain water restores only the volume of the blood plasma, inhibiting the thirst mechanism before solute levels can be replenished. Solid foods can contribute to fluid loss from vomiting and diarrhea. Urine concentration and frequency will customarily return to normal as dehydration resolves.

CONCLUSION

The study concludes that the manipulation of the gut microbiota through the administration of probiotics, prebiotics, synbiotics or faecal microbiota transplantation to assess changes in human microbiome composition have impacts on aspects of both colonic health and function, as well as affecting host metabolism.

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