

Commentary

Probiotics and controversies

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Probiotics are bacteria with potential health enhancing and curing effects and are generally used for treating various forms of diarrheal diseases. The increasing use of probiotics is getting controversial both in terms of efficacy and potential side effects, as there is no conclusive study on the optimal dose and product formulation of probiotics.

Key words: Probiotics, living microorganisms, bacteria.

The wide spread use of antibiotics and their broad spectrum activity has put the natural microflora of the body at constant threat and has attracted many people towards probiotics. Probiotics are non-harmful bacteria that help maintain the balance of natural gut microflora. There is an increasing demand and acceptability for probiotics. Annually, over one billion doses of probiotics are administered worldwide and are available commercially in many forms, including foods, dietary supplements, and clinical therapeutics with oral or non-oral delivery (Vyas and Ranganathan, 2012). The use of probiotics has shown very promising results in treating gastrointestinal diseases (Culligan et al., 2009), which cause significant mortality and morbidity worldwide. But at the same time, the use of probiotics is compromising on few things. Every human has a unique set of microbial communities in the body and which significantly differ from other individuals. So the probiotics which have shown positive results for one individual might not be that good for others in the long run.

The general limitations of probiotics are:

- 1) Since they are living organisms (bacteria or yeast) each strain may have different characteristics, and may not give necessarily the same results in every case;
- 2) Human body harbours approximately 100 trillion bacteria with diverse phylogeny and somewhere between 300 (Gaurner et al., 2003) to 1000 different species live only in the gut (Sears, 2005). Introducing an alien strain having different genetics can interact and affect the existing microbial communities in any direction;
- 3) Probiotics leads towards personalized medicines, one formulation which might be good for one individual might not be that effective for others because the probiotics have to establish a relationship in the body and there is no guarantee that the normal body flora will always welcome those organisms;
- 4) Every individual has different immunity level. Probiotics, since are living organisms, can threaten the immunocompromised individuals or children.

Controversies about the use of probiotics persist because there are no conclusive studies on specific strains to be used, their formulations, and dose administration (Morrow and Kollef, 2008).

REFERENCES

- Gaurner F, malagelada JR (2003). Gut flora in health and disease. *Lancet*. 361:512-519.
- Sears CL (2005). A dynamic partnership: Celebrating our gut flora. *Anaerobe*. 11:247-251.
- Morrow LE, Kollef MH (2008). Probiotics in the intensive care unit: why controversies and confusion abound. *Critical Care*12:160.
- Culligan EP, Hill C, Sleator RD (2009). Probiotics and gastrointestinal disease: successes, problems and future prospects. *Gut Pathogens* 1:19.
- Vyas U, Ranganathan N (2012). Probiotics, Prebiotics, and Synbiotics: Gut and Beyond. *Gastroenterol. Res. Pract.* Article ID 872716, 16 p.