

## Editorial

### Probiotics in Pediatrics: Quo Vadis?

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The explosion of research and knowledge on the role of the microbiome, specifically the gut microbiome, has brought forth a dazzling array of new ideas, concepts, innovations and more queries in the field of therapeutic and preventive medicine. The concept of the microbiome seems to explain the pathophysiology, prevention and management of every conceivable diseases that afflict the human body. It has been linked to a number of organs systems – the microbiota with their respective genes have been described not only in the gastrointestinal tract (GIT), but also in the skin, pulmonary system, urogenital tract, the hematological system, the immune system and the like.

One of the initial and greatest contributions of the concept of the microbiome to medicine is probiotics. Probiotics, as simply described, are live microorganisms that provide specific health benefits to the human host once ingested in the correct dosage and format. The initial researches on probiotics were obviously on the diarrheas, specifically acute non-bloody diarrhea since they are mostly in oral forms. A number of species and strains with their respective recommended dosages have been studied; as of this writing, *Lactobacillus rhamnosus* GG, *Saccharomyces boulardii* and *Lactobacillus reuteri* DSM 17938 are the most studied ones. They have been proven to shorten the duration of diarrhea by at least day. Of course, there are various experts in the fields who have voiced out their dissenting opinions regarding this but the overall verdict is that certain species and strains of probiotics, especially in children, may be helpful as an adjunct to oral rehydration therapy.

However beyond diarrhea, a lot of other diseases or abnormal conditions were studied or currently being studied in terms of whether probiotics may be also helpful. As far as the gastrointestinal tract is concerned, probiotics have been studied in such conditions as infant colic, regurgitation, functional abdominal pain, constipation, irritable bowel syndrome and even in some variants of inflammatory bowel diseases. Although the findings are not as hard as compared to that of acute non-bloody diarrhea, the trends of the data are towards benefit as far as these conditions are concerned. Again, there are dissenting opinions and even researches that are available to contradict the present conclusions; that's the reason why more researches are being done to finally prove the role of probiotics in such situations.

The important aspect of preventing side effects associated with antibiotic prescription has also been looked into as far as probiotic use is concerned. Again, the data are favorable with regard the preventive effects of certain strains of probiotics in the occurrence of diarrhea and other digestive side effects after antibiotic intake.

Beyond the GIT, researches on probiotics in pediatrics have extended to the realm of other organs, most notably in the prevention and treatment of urinary tract infection, milk allergy and even explaining the mood and behavior of autistic children and how probiotics can control such occurrences.

Indeed, the role of probiotics has tremendously increased in number, indications and researches in the last decade or so. This may not be only explained by the commercial popularity of the product since they can be available over-the-counter, but also due to the keen interest of scientists and consumers alike with regard its use not only in the treatment of diseases but also possibly, in the maintenance of good health and the strengthening of immunity. We can expect more researches on probiotics in the future as we learn more about the impact of the microbiome on health and diseases as far as humans, especially children are concerned.

The overall health of the child is of utmost importance that's the reason why we continuously search for strategies that may be efficacious, safe and affordable for all consumers and patients. The recent Covid-19 pandemic has brought forth a number of non-pharmaceutical interventions that can, hopefully, provide an answer to how we can protect our children more against such catastrophic events.

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