Probiotics for the Chemoprotective Role Against the Toxic Effect of Cancer Chemotherapy

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Abstract: Background: Chemo- and radiation therapy-based clinical management of different types of cancers is associated with toxicity and several side effects. Therefore, there is always an unmet need to explore agents that reduce such risk factors. Among these, natural products have attracted much attention because of their potent antioxidant and antitumor effects. In the past, some breakthrough outcomes established that various bacteria in the human intestinal gut are bearing growth-promoting attributes and suppressing the conversion of pro-carcinogens into carcinogens. Hence probiotics integrated approaches are nowadays being explored as rationalized therapeutics in the clinical management of cancer. Methods: Here, published literature was explored to review chemoprotective roles of probiotics against toxic and side effects of chemotherapeutics. Results: Apart from excellent anti-cancer abilities, probiotics bear and alleviate toxicity & side effects of chemotherapeutics, with a high degree of safety and efficiency. Conclusion: Preclinical and clinical evidence suggested that due to the chemoprotective roles of probiotics against side effects and toxicity of chemotherapeutics, their integration in chemotherapy would be a judicious approach. Keywords: Anticancer, probiotics, radiation, antioxidant, cancer, chemotherapy, pre-biotics, post-biotics, Bifidobacterium, Lactobacillus, gut microbiota.