Role of Saccharomyces Boulardii as Adjunctive Treatment in Non-clostridium Difficile Infection, Nosocomial Diarrhea in Department of Internal Medicine, Siriraj Hospital

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Background: Nosocomial diarrhea (ND) is common in hospitalized patients. Majority of them were non- Clostridium difficile infection nosocomial diarrhea (non-CDI-ND). This led to an increased risk of dehydration, malnutrition and infection. This also attributes to increase length of stay, cost, morbidity and mortality. There is no established management guideline for non-CDI-ND. Practically, physicians modified medications/feedings protocol to alleviate this condition. However, there are situations that lead to intestinal dysbiosis, such as antibiotic, enteral and parenteral nutrition. Gut microbiota has been found to be a major role in gut homeostasis while dysbiosis could cause gut dysfunction including diarrhea. Saccharomyces boulardii; a kind of probiotic, showed a promising result in shortening course of acute diarrhea as well as to prevent recurrent antibiotic associated diarrhea. We expected that probiotic might help to restore healthy gut microbiota which might relieve non-CDI-ND.

Objective: The aim of this study was to compare effectiveness of Saccharomyces boulardii (SB) to standard care (SC) in non-CDI-ND.

Methods: This was a RCT. Patients with non-CDI-ND and admitted to internal medicine wards, Siriraj hospital were randomly allocated to either SB or SC. In SB group, one capsule (250 mg) was given in twice daily dosage for 5 days. This would be applied once patients met criteria for ND with negative result of stool for C.difficile by PCR method. Treatment outcomes including stool volume, frequency and consistency were recorded. Mean and median were used for descriptive data and Chi-square statistics were computed for comparative data.

Results: A total of 42 eligible patients were enrolled from August 2016 to December 2017. 22 patients (M=13, mean age=71.50±14.50) in SC group and 20 patients (M=8, mean age=73.91±13.77) in SB group were recruited. Preliminary analysis demonstrated the changes of mean stool volume from baseline up to 5 days of treatment between the groups, with no significant difference (SB 136.80 vs SC 238.29 ml; P=0.12). Median change of stool frequency (SB 0.90 vs SC 1.18 times; P=0.19), and consistency were similar (SB 0.20 VS SC 1.20; P=0.79). No adverse event of SB group was reported.

Conclusion: Although probiotic is safe, Saccharomyces boulardii adds no benefit in treatment of non-CDI-ND. These are applicable across all outcomes including stool volume, frequency and consistency.

Keywords: Saccharomyces boulardii, Nosocomial diarrhea, Probiotic