

RETRACTED ARTICLE

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The effect of a single-strain probiotic administration in the treatment of thermal burns patients

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- ABSTRACT -
- **Background and Objectives:** Between 2007 and 2011, the mortality rate for burns patients at Dr. Soetomo General Hospital, Surabaya, Indonesia was 14.1% and 60% were suspected to be sepsis-related. Immunosuppression, gut barrier disruption, and intestinal hypomotility cause bacterial and bacterial product translocation. Probiotics improve the intestinal microbiome and eventually reduce bacterial translocation, and an increased secretory immunoglobulin A (SIgA) secretion post-administration of a multi-species probiotic has been observed. We aimed to determine whether a single-strain probiotic administration could show strengthened intestinal immunity, through an increase in SIgA levels, as with multi-strain probiotics.
- **Materials and Methods:** Sixteen burns patients from our hospital Burns Centre were randomized into three treatment groups, and the patients were administered either a placebo, a *Lactobacillus reuteri protectis* probiotic, or a *Bifidobacterium infantis* 35624 probiotic for 14 consecutive days. The SIgA levels were analyzed using ELISA pre- and post-treatment.
- **Results:** The post-treatment SIgA levels in the placebo, *Lactobacillus reuteri protectis* probiotic, and *Bifidobacterium infantis* 35624 probiotic groups were 222.56 ± 74.22 mg/dL, 223.92 ± 68.89 mg/dL, and 332.38 ± 64.27 mg/dL, respectively. Decreased SIgA levels were observed in the placebo (7.19 ± 15.87) and in the *Lactobacillus reuteri protectis* probiotic (1.9920 ± 14.76) groups, whereas an increase was seen in the SIgA level in the *Bifidobacterium infantis* 35624 probiotic group (58.26 ± 77.41).
- **Conclusion:** The *Bifidobacterium infantis* 35624 single-strain probiotic is generally superior to *Lactobacillus reuteri protectis* in altering intestinal immunity; however, this finding was not statistically significant. A multi-strain probiotic supplement is recommended for burns patients.