

Benefits of Bacillus Clausii in Acute Childhood Diarrhoea

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ABSTRACT:

Bacteriotherapy plays a significant role in intestinal dysbiosis. We conducted two prospective, randomized, open label, comparative studies on Bacillus Clausii (Probiotic) in acute childhood diarrhoea.

AIMS:

Study I: Our primary aim was to study the safety and efficacy of Bacillus Clausii (BC) in acute childhood diarrhoea in 160 cases. We also assessed its role related to the duration and frequency of diarrhoea, dehydration and exclusive breast feeding.

Study II: We evaluated the role of BC in reducing the frequency and duration of diarrhoeal episodes along with the hospital stay and economic burden of diarrhoea in 131 cases.

METHODS: Cases were divided into 2 groups: Group 1/ Study Group included children on oral rehydration therapy (ORT) + Zinc + BC and Group 2/ Control Group comprised of children on ORT+ Zinc. Ethical clearance was sought in both the studies.

OBSERVATION AND RESULTS:

STUDY I: The duration of diarrhoea was significantly altered in Study Group, 22.26 hours as compared to Control Group, 34.16 hours ($p < 0.05$). The mean frequency of stool after BC administration in Study Group reduced from 6.3 to 1.16 and in Control Group from 3.56 to 1.70. Maximum cases in study and control group presented with no dehydration; 74% and 95% respectively. The positive aspect of exclusive breast feeding in majority of the cases in the control group (82.5%) and study group (88.7%) was observed.

STUDY II: The duration of diarrhoea in Group 1 was 22.64 hours and Group 2 was 47.05 hours ($p < 0.01$). The frequency of diarrhoea showed improvement within 24 and 60 hours in Group 1 and Group 2 respectively ($p < 0.01$). The mean duration of hospital stay was 2.78 days in Group 1 and 4.30 days in Group 2. The treatment cost was INR 779 and INR 944 and social cost was INR 937 and 1409 in Group 1 & 2 respectively. Thus Group 1 & 2 spent INR 1716 and INR 2353 respectively.

CONCLUSION: Bacillus Clausii has a promising role as an add-on therapy to ORT and Zinc in acute diarrhoea. It was safe and efficacious and significantly reduced duration and frequency of diarrhoea. We have also highlighted the efficacy of BC in degree of dehydration and effect of exclusive breast feeding. It reduced the hospital stay thereby downscaling the financial burden on the family. Our study could be regarded as a proof of concept to support the original definition of probiotics.

