Abstract 17

Probiotic use Reduces Incidence of Antibiotic Associated Diarrhoea among Adult Patients; A Systematic Review and Meta-Analysis

Wanyama H

Moi Teaching and Referral Hospital, Eldoret, Kenya. Email: hnyongessa@gmail.com

Abstract

Background: Among efforts used to combat Antibiotic Associated Diarrhoea (AAD), particularly clostridiodes difficile infection, is prescription of probiotics. These live microorganisms are deemed to offer beneficial effects in a dysbiotic gut, limiting the incidence and severity of diarrhoea.

Objective: To evaluate available evidence for use of probiotics in controlling and preventing antibiotic associated diarrhoea.

Methods: We designed a systematic review and meta-analysis protocol, with intention to search literature published between 2010 and 2023 in the following electronic databases: PubMed, EMBASE, Scopus, Google Scholar. Only articles published in English were considered. Randomised controlled trials were reviewed if they met a prior inclusion criteria. Eligible studies were analysed for risk of bias using Rob2 tool, followed by data extraction using pre-constructed forms. We used a random effects model for all meta-analysis. Subgroups analysis were performed to evaluate sample size, age and number of probiotic strains influence on pooled outcome.

Results: Fifteen trials with total participants (7,427) were included in this review. Overall quality of studies evaluated was rated as moderate. The pooled analysis favoured administration of probiotics by reducing incidence of AAD by 40% (risk ratio= 0.60, 95% (0.43, 0.82). In subgroup analyses, studies with sample sizes below 180 per group or with participants with mean age above 65 years also demonstrated beneficial effect (RR: 0.75, 0.47, respectively). Multi strain probiotics showed more protective effect compared to dual or single strain probiotics (RR: 0.40 versus 0.9 or 0.6, respectively). However, there existed significant heterogeneity across studies.

Conclusion: This review suggests a protective effect of administering probiotics to reduce incidence of AAD. Multi strain combinations are considered to be more beneficial. The results are obscured by heterogeneity of studies, calling for properly designed large scale RCTs to better characterise these benefits.

Key words: Probiotics, Antibiotic associated diarrhoea