

Executive Summary: Probiotics for gastrointestinal disorders: proposed recommendations for adults of the Asia-Pacific region

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Introduction

The Asia-Pacific region is politically, economically and culturally diverse, encompassing high-, middle- and low-income countries in both hemispheres, and including more than half of the world's population. However, infectious diseases including *Helicobacter pylori* infection and infectious diarrhea still predominate over gastroesophageal reflux disease and IBD in Asia as a whole compared with Western countries. Internationally, several organizations have reviewed the evidence and developed recommendations on the use of probiotics for the prevention and treatment of disease;⁸⁰⁻⁸³ yet, to date, no group has specifically considered data relevant to the Asia-Pacific region. In order to address this subject, a meeting of fourteen international experts from leading Asia-Pacific countries was held to discuss current evidence supporting the use of probiotics for the

management of gastrointestinal disorders in the region

Methodology

Experts from Australia, China, India, Indonesia, Japan, South Korea, and Singapore, as well as outside Asia-Pacific (USA, Uruguay, UK, The Netherlands, and Italy) met to discuss the epidemiology of diarrheal diseases in Asia-Pacific, the use of probiotics in the region, and regulations relating to probiotic use, as well a more general review of current evidence supporting their use in the management of gastrointestinal disorders. Workshops on the use of probiotics in both adults and children were held; this article describes the status of research on probiotic use in adults.

Recommendation design

Firstly, the target diseases and their impact were defined, and the definitions and outcomes for each disease were agreed upon.

The recommendations were then designed based on the steps used in the GRADE¹⁵ system in order to categorize each one according to a weak or strong individual rating. Once the recommendations were designed, the participants were asked to provide a consensus on the proposed recommendations using the Likert scale. The recommendations were further revised based on the feedback received after circulating the proposed recommendations to countries in the Asia-Pacific region until final consensus was achieved as judged by agreement by all participants with grade 4 or 5 in the Likert scale (corresponding to “agree” and “strongly agree”, respectively). The final steps will be the validation of recommendations through field trials to evaluate their applicability and efficacy using previously tested methodology.

Findings

While it is acknowledged that more data specific to the Asia-Pacific region is needed for many of the indications listed below. It is important to note that guidelines developed in one country may not be applicable in other countries depending on the prevalence and etiology of the clinical condition, the availability or cost of recommended interventions and the organization of health care. The following recommendations proposed for adult intestinal diseases were agreed upon by all participants of the working group and are based on available data.

Antibiotic-and C. difficile-associated diarrhea

Probiotic administration, particularly *S. boulardii* CNCM I-745 and *L. rhamnosus* GG should be considered in the prevention of AAD and *C. difficile*-associated diarrhea with good quality of evidence.¹¹⁸⁻¹²⁴

Traveler's diarrhea

Current data shows a substantial correlation between the prevention of traveler's diarrhea and probiotics although the data is insufficient to recommend a specific strain or preparation.¹²⁷

Inflammatory bowel disease

Data regarding the administration of probiotics in the treatment in IBD is insufficient to validate its efficacy, regardless of the strain or preparation.^{75,126}

Irritable Bowel syndrome

Available studies show there is strong evidence regarding the efficacy of probiotics in the relief of symptoms in irritable bowel syndrome as well as the prevention of relapse after antibiotic treatment of an episode of pouchitis.^{68-74,125}

Helicobacter pylori infection

Available data shows the efficacy of *Lactobacillus*-containing probiotics and *Saccharomyces boulardii* in the eradication rates of *H. pylori* and a reduction of side effects in adults undergoing antibiotic therapy for *H. pylori* eradication.¹²⁸⁻¹³¹

Recommendations

Since international guidelines may not be applicable on a per-country basis, it is imperative that guidelines be developed for each country individually. This may be through the development of *de novo* guidelines or by adapting/modifying international guidelines according to applicability to national or regional clinical practices through the assessment of how well the international data applies locally in terms of disease epidemiology, etiology and healthcare environments.

Areas for future research

Other potential indications for probiotic use that would require further research include lactose intolerance, post-infectious IBS, tropical sprue, SIBO (e.g. after prolonged use of proton pump inhibitors), non-alcoholic fatty liver disease, complications of liver disease, constipation, and enteropathy associated with non-steroidal anti-inflammatory drugs as well as other conditions aside from those affecting the gastrointestinal tract such as respiratory tract infections, urinary tract infections, bacterial vaginosis, pollenosis, allergic rhinitis and asthma, diabetes mellitus, hyperlipidemia, obesity/metabolic syndrome, and minimal hepatic encephalopathy.

Conclusion

Although the evidence supporting the modulation of gastrointestinal functions and symptoms through probiotic therapy is increasing, the current lack of national guidelines in the region calls for the need of further research as the spectrum of disease seen across Asia-Pacific differs from that of Europe and North-America.

Disclosure statement

Eamonn MM Quigley holds stock and is a consultant for Alimentary Health, is a member of the speakers' bureau for Proctor & Gamble, is an adviser for Allergan, Biondine, Commonwealth Labs, Ironwood, Rhythm, Shire, and Synergy and has received research support from Rhythm, Vibrant and Brennan Spiegel. Kok-Ann Gwee is on the advisory board and speakers' bureau of Abbott Laboratories from which he has received a research grant; he has also received a research grant from Janssen Pharmaceuticals and is a member of the speakers' bureau; he is on the advisory board and speakers' bureau of Menarini Asia-Pacific and Biocodex; finally, Kok-Ann Gwee is on the advisory board of Danone Research and Commonwealth Diagnostics International. Henry Cohen is a member of the speaker's bureau for Biocodex and an advisor to Mega Pharma. Uday C Ghoshal, Kentaro Sugano Gerald Holtmann, Marcellus Simadibrata: Yanmei Li; Soo Jung Park and Kaichun Wu have no conflict of interest to declare. Prof Eamonn Quigley and Prof. Henry Cohen received consultancy fees. None of the other participants received consultancy fees for participating, editing or reviewing the

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