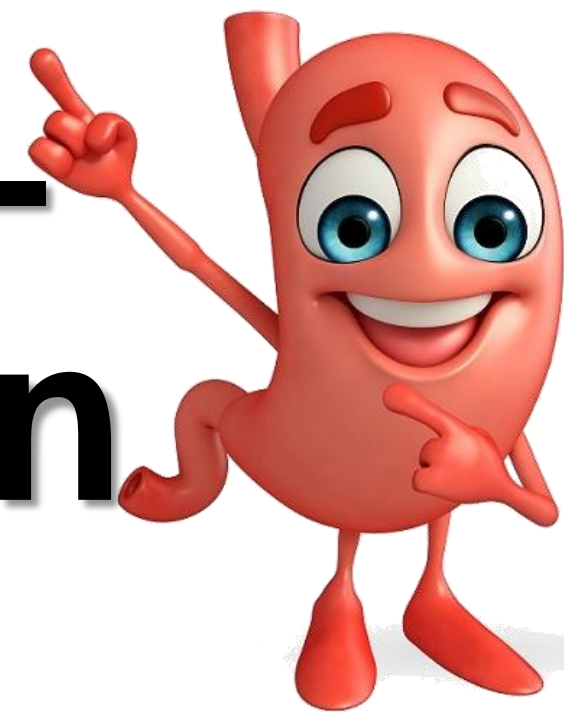




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Don't Go With Your GUT Feel – An Evidence-Based Review on Probiotics

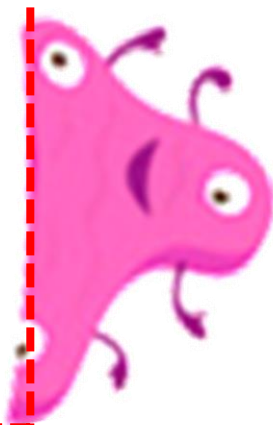


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Introduction

Probiotics are commonly used in the management of acute gastroenteritis (AGE) as it has shown to reduce the duration of diarrhoea. Historically, heat-killed *Lactobacillus acidophilus* (Brand A) has always been used in KKH.

The quantum procured annually for probiotics in the hospital is extremely large and involves huge costs (~SGD100,000).



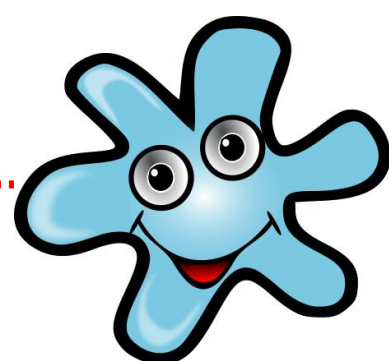
Problem Statement

No formal evaluation on the use of probiotics in the hospital, which may result in monopoly of certain brands and impede evidence-based practice.

Objectives

This project aims to methodologically review the use of probiotics for AGE to ensure current practice is consistent with up-to-date evidence and in patients' best interests.

Methodology



- Literature search performed on probiotics' use in paediatrics for the treatment of AGE.



- Overseas paediatric institutions e.g. Royal Children's Hospital, Australia contacted for advice and experience.



- Expert opinions of our hospital's gastroenterologists were sought.



- Results presented to Pharmacy and Therapeutics (P & T) committee, with consideration of potential impact to healthcare cluster and costs

References:

- Guarino A, et al. European Society for Pediatric Gastroenterology, Hepatology and Nutrition (ESPGHAN)/European Society for Pediatric Infectious Diseases evidence-based guidelines for the management of acute gastroenteritis in children in Europe: update 2014. *J Pediatr Gastroenterol Nutr.* 2014; 59(1): 132-152.
- Szajewska H, et al. Use of probiotics for management of acute gastroenteritis: a position paper by the ESPGHAN Working Group for Probiotics and Prebiotics. *J Pediatr Gastroenterol Nutr.* 2014; 58(4):531-539.
- Farthing M, WGO, et al. Acute diarrhea in adults and children: a global perspective. *J Clin Gastroenterol* 2013; 47(1): 12-20.
- Thomas DW, American Academy of Pediatrics Committee on Nutrition, American Academy of Pediatrics Section on Gastroenterology, Hepatology and Nutrition. Probiotics and prebiotics in pediatrics. *Pediatrics.* 2010; 126(6):1217-1231.
- Farthing M, WGO, et al. Acute diarrhea in adults and children: a global perspective. *J Clin Gastroenterol* 2013; 47(1): 12-20.

Results & Discussion

Findings (1)

The effects of probiotics are strain-specific, hence the choice should be one where its **efficacy has been confirmed in well-conducted randomized, controlled trials.**

Findings (2)

STRAIN	RECOMMENDATION FOR MANAGEMENT OF AGE	QUALITY OF EVIDENCE
Heat-killed <i>Lactobacillus acidophilus</i> (BRAND A)	Weak	Very low
<i>Lactobacillus rhamnosus</i> GG (BRAND B)	Strong	Low
<i>Saccharomyces boulardii</i> (BRAND C)	Strong	Low

Findings (3)

The **minimum licensing age** for BRAND B was lower than that of BRAND C, and it also had an **overall good safety profile** with no concerns of cross-contamination. This is important in our paediatric setting as it means children of all ages can use it.

Findings (4)

For a treatment duration of 5 days, the cost of BRAND B was **more expensive** than BRAND C by approximately SGD6. However, the price of BRAND B was **comparable** to BRAND A, which is currently being used.



The committee selected BRAND B over Brand C, and removed BRAND A from the formulary.

Conclusion

This evidence-based review has illustrated a systematic approach towards selecting the most appropriate probiotic for AGE, based on efficacy, safety and cost. It also exemplifies the importance of integrating clinical expertise with best available evidence instead of relying on historical practice.

