

INTISARI

PENGARUH KONSUMSI SUSU FORMULA YANG DISUPLEMENTASI GABUNGAN STRAIN BIFIDOBACTERIA (*B. LONGUM* BB536, *B. BREVE* M-16V, DAN *B. LONGUM* SUBSP. *INFANTIS* M-63) TERHADAP GANGGUAN SALURAN CERNA FUNGSIONAL ANAK SEHAT USIA 1 – 3 TAHUN DIUKUR DENGAN ROME IV DIAGNOSTIC QUESTIONNAIRE

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Latar belakang: Pada periode awal kehidupan, mikrobiota usus didominasi golongan *Bifidobacterium* yang dapat memelihara kesehatan saluran pencernaan. Akan tetapi, jumlahnya justru rendah pada bayi usia 1 – 3 tahun dalam masa penyapihan. Hal itu menyebabkan terjadinya ketidakseimbangan mikrobiota usus dan menimbulkan masalah kesehatan. Probiotik merupakan bakteri hidup yang dapat menyeimbangkan mikrobiota saluran pencernaan dan memelihara imunitas tubuh. Berbagai penelitian menunjukkan bahwa pemberian probiotik dengan strain *B. longum* BB536, *B. breve* M-16V, dan *B. infantis* M-63 terbukti aman dan dapat memberikan manfaat kesehatan bagi bayi. Oleh karena itu, dibutuhkan penelitian lebih lanjut terkait manfaat ketiga strain *Bifidobacterium* ini terhadap kesehatan saluran pencernaan anak, khususnya menilai kejadian diare, konstipasi, nyeri abdomen, dan *Irritable Bowel Syndrome* (IBS).

Tujuan: Mengetahui pengaruh pemberian susu formula yang disuplementasi gabungan strain *Bifidobacteria* (*B. longum* BB536, *B. breve* M-16V, dan *B. longum* subsp. *infantis* M-63) terhadap kesehatan saluran pencernaan anak sehat usia 1 – 3 tahun.

Metode: Penelitian ini menggunakan metode Uji Acak Terkendali dengan metode buta berganda yang dikontrol plasebo. Sejumlah 91 anak sehat usia 1 – 3 tahun diberikan uji klinis selama 104 hari dengan periode baseline selama 14 hari dan periode intervensi selama 90 hari. Data kejadian diare, konstipasi, nyeri abdomen, dan *Irritable Bowel Syndrome* (IBS) dinilai menggunakan kuesioner berdasarkan kriteria Rome IV yang diberikan pada awal dan akhir penelitian untuk dibandingkan antara populasi intervensi dan plasebo. Uji *Chi-Square* atau *Fisher's exact* dilakukan untuk menganalisis signifikansi antara grup intervensi dan plasebo. Uji *McNemar* dilakukan untuk menganalisis signifikansi kejadian sebelum dan setelah intervensi.

Kesimpulan: Konsumsi susu formula yang disuplementasi gabungan strain *Bifidobacteria* (*B. Longum* BB536, *B. Breve* M-16V, dan *B. Longum* subsp. *infantis* M-63) memiliki tren positif secara klinis dalam menurunkan kejadian gangguan saluran cerna fungsional (diare fungsional, konstipasi fungsional, nyeri abdomen, dan *Irritable Bowel Syndrome*) anak sehat usia 1 – 3 tahun. Namun, perbedaan proporsi kelompok probiotik dan kelompok plasebo tidak bermakna secara statistik.

Kata kunci: susu formula, suplementasi, *Bifidobacteria*, saluran pencernaan, anak

ABSTRACT

THE EFFECT OF FORMULA MILK SUPPLEMENTED WITH A COMBINATION OF BIFIDOBACTERIA STRAINS (*B. LONGUM* BB536, *B. BREVE* M-16V, AND *B. LONGUM* SUBSP. *INFANTIS* M-63) ON FUNCTIONAL GASTROINTESTINAL DISORDERS IN HEALTHY CHILDREN AGED 1-3 YEARS AS MEASURED BY ROME IV DIAGNOSTIC QUESTIONNAIRE

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Background: In the early period of life, the gut microbiota is dominated by Bifidobacterium which plays a crucial role in maintaining gastrointestinal health. However, the number of Bifidobacterium is often reduced in infants aged 1-3 years during the weaning period. This imbalance in the gut microbiota can lead to various health problems. Probiotics are living bacteria that can restore the balance of the gut microbiota and enhance the immune system. Various studies have shown that the administration of probiotics with strains of *B. longum* BB536, *B. breve* M-16V, and *B. infantis* M-63 has been proven to be safe and beneficial for infants. Therefore, further research is needed to investigate the benefits of these three strains of Bifidobacterium on children's gastrointestinal health, particularly assessing the incidence of diarrhea, constipation, abdominal pain, and Irritable Bowel Syndrome (IBS).

Objective: To investigate the effect of formula milk supplementation with a combination of Bifidobacteria strains (*B. longum* BB536, *B. breve* M-16V, and *B. longum* subsp. *infantis* M-63) on the gastrointestinal health of healthy children aged 1 – 3 years.

Method: This study uses a double-blind, placebo-controlled randomized controlled trial design. A total of 91 healthy children aged 1-3 years were given a clinical trial for 104 days with a baseline period of 14 days and an intervention period of 90 days. Data on the incidence of diarrhea, constipation, abdominal pain, and Irritable Bowel Syndrome (IBS) were assessed using a questionnaire based on Rome IV criteria that will be given at the beginning and end of the study for comparison between the intervention population and placebo. The Chi-Square or Fisher's exact test were used to analyze the significance between the intervention and the placebo group. The McNemar test were used to analyze the significant before and after the intervention period.

Conclusion: Consumption of formula milk supplemented with a combination of Bifidobacteria strains (*B. longum* BB536, *B. breve* M-16V, and *B. longum* subsp. *infantis* M-63) showed a clinically positive trend in reducing the incidence of functional gastrointestinal disorders (functional diarrhea, functional constipation, abdominal pain, and Irritable Bowel Syndrome) in healthy children aged 1 – 3 years. However, the difference in the proportion of the probiotic and the placebo group was not statistically significant.

Key words: formula milk, supplementation, Bifidobacteria, gastrointestinal, children