ABSTRAK

Mikrobiota usus bayi normal lahir seksio sesarea (SS) didominasi oleh bakteri yang merugikan dan akan membaik pada usia 6 bulan. Hal ini akan berdampak terhadap perubahan respons imun. Penelitian ini bertujuan untuk menentukan proporsi jumlah *B. lactis strain BSMZ 10140* dalam feses, kadar IL-4, IL-12, TGF-β dan IL-23 dalam serum, serta kadar SIgA feses pada bayi normal lahir SS tanpa ASI eksklusif yang mendapat susu formula mengandung *B. lactis strain BSMZ 10140* dan tidak mengandung *strain* tersebut. Penelitian *randomized open label clinical trial* dilakukan selama periode November 2009 sampai Oktober 2010 terhadap 96 bayi normal, berat badan lahir ≥2.500 g, lahir SS di RS Dr. Hasan Sadikin Bandung. Sejak lahir, selama 4 minggu sebanyak 48 bayi diberikan kombinasi ASI dan susu formula probiotik dan 48 bayi sebagai kontrol. Pada usia 4 minggu diperiksa jumlah *B. lactis strain BSMZ 10140* dalam feses dengan metode *polymerase chain reaction,* kadar IL-4, IL-12, TGF-β, dan IL-23 serum serta SIgA feses dengan metode *enzyme immunoassay technique*. Jumlah bakteri $>10^3$CFU/mL pada kelompok probiotik sebanyak 35 dari 48 bayi, sedangkan pada kelompok kontrol sebanyak 3 dari 48 bayi ($p<0,01$). Median kadar IL-12, IL-4, TGF-β, dan IL-23 serum pada kelompok probiotik berturut-turut adalah: 0,39; 0,10; 36.495; dan 37,98 pg/mL, sedangkan pada kelompok nonprobiotik: 0,34; 0,10; 36.074 dan 29,61pg/mL ($p>0,05$). Kadar SIgA feses pada kelompok probiotik 22.132 ug/mL (SB: 10.191), sedangkan kelompok nonprobiotik 21.928 ug/mL ($p>0,05$). Simpulan bayi normal lahir SS yang mendapat susu formula mengandung probiotik pada usia 4 minggu: kolonisasi kuman didominasi oleh *B. lactis strain BSMZ 10140*, sedangkan sitokin serum (IL-4, IL-12, TGF-β, dan IL-23) dan SIgA feses tidak berbeda bermakna dengan yang mendapat susu formula tidak mengandung probiotik.

Kata kunci: *B. lactis*, seksio sesarea, SIgA feses, sitokin serum

ABSTRACT

The microflora of infants born by cesarean section (CS) are more often colonized with harmfull bacteria and disturbs for up to 6 months after birth. This will impact on the immune response. The aim of this study was to determine the proportion of *B. lactis strain BSMZ 10140* in the stool, the levels of IL-4, IL-12, TGF-β dan IL-23 in serum and stool levels of SIgA in normal infants born by CS without exclusive breastfeeding who received formula milk containing *B. lactis strain BSMZ 10140*, and contains no strain of that bacteria. The randomized open labelled clinical trial study was conducted during the period of November 2009 until October 2010 on 96 normal infants, birth weight ≥2,500 g, born by CS at Dr. Hasan Sadikin Hospital Bandung. Since birth, 48 infants were given the combination of breast milk and infant formula with probiotic for 4 weeks and 48 infants as control. At the age of 4 weeks the number of *B. lactis strain BSMZ 10140* was examined in the stool by polymerase chain reaction method, the levels of IL-12, IL-4, TGF-β, and IL-23 serum and SIgA stool were examined with enzyme immunoassay technique methods. The number of bacteria $>10^3$ CFU/mL in the probiotic group were 35 of 48 infants, whereas in the control group were 3 of 48 infants ($p<0.01$). Median serum levels of IL-12, IL-4, TGF-β, and IL-23 on probiotic group were 0.39, 0.10, 36.495 and 37.98 pg/mL, whereas the non-probiotic group: 0.34, 0.10, 36.074 and 29.61 pg/mL ($p<0.05$). Mean fecal levels of SIgA was 22.132 ug/mL (SD:10.191) in the probiotic group, while in nonprobiotic group was 21.928 ug/mL. Conclusions, normal babies born by CS who received milk formula containing probiotics at age of 4 weeks: the colonization of bacteria are dominated by strain *B. lactis BSMZ 10140*, whereas cytokines serum (IL-12, IL-4, TGF-β, and IL-23) and SigA stool are not significantly different compared with those who received milk formula containing no probiotics.

Key words: *B. lactis, cesarean section, SIgA stool, serum cytokines*