

## INTISARI

### Latar Belakang:

Diare pasca kemoterapi pada pasien anak dengan *Acute Lymphoblastic Leukemia* (ALL) cukup sering terjadi dan dapat menyebabkan permasalahan kesehatan yang dapat mengancam jiwa. *National Cancer Institute* (NCI) membagi diare pasca kemoterapi menjadi 5 derajat keparahan yang memiliki gejala bervariasi dari ringan, sedang bahkan dapat menyebabkan gangguan fisiologis dan kolaps hemodinamik. Diare pasca kemoterapi harus dibedakan berdasarkan derajat diare karena dapat mempengaruhi dosis kemoterapi berikutnya, penundaan atau pemberhentian kemoterapi. Saat ini belum ada biomarker diagnostik dalam membedakan derajat diare pasca kemoterapi. Diare pasca kemoterapi terjadi karena peradangan yang disebabkan oleh obat-obatan kemoterapi. *Fecal calprotectin* (FC) merupakan salah satu penanda inflamasi pada usus. Penanda inflamasi tersebut pada diare pasca kemoterapi serta kadarnya pada berbagai derajat diare pasien ALL anak pasca kemoterapi belum pernah diteliti. Diperlukan suatu penelitian yang menganalisis kadar *fecal calprotectin* dan perbedaannya pada berbagai derajat diare pasien ALL anak pasca kemoterapi di RSUP Dr. Sardjito

### Tujuan:

Untuk mengetahui perbedaan kadar *fecal calprotectin* pada berbagai derajat diare pasien ALL anak pasca kemoterapi di RSUP Dr. Sardjito

### Metode:

Penelitian ini merupakan penelitian observasional dengan pendekatan potong lintang dengan subjek penelitian yang melibatkan pasien anak ALL pasca kemoterapi dengan berbagai derajat diare yang melakukan pemeriksaan laboratorium di Pusat Kanker Terpadu RSUP Dr. Sardjito Yogyakarta. Kadar *fecal calprotectin* diperiksa dari sampel feses pasien dengan menggunakan metode ELISA kuantitatif. Selanjutnya dilakukan uji beda kadar FC pada klasifikasi derajat diare pasca kemoterapi dengan nilai  $p < 0,05$  ditetapkan bermakna secara statistik. Analisis data ini menggunakan bantuan perangkat lunak SPSS versi 25. Data karakteristik subyek penelitian disajikan secara deskriptif. Data kategorikal disajikan dalam bentuk proporsi. Distribusi data diperiksa dengan uji *Kolmogorov Smirnov*. Perbedaan kadar *fecal* FC dianalisis dengan uji beda menggunakan *Kruskal-Wallis test*, dan selanjutnya dilakukan analisis *post-hoc* kadar FC antar masing-masing derajat. Hasil uji beda dikatakan bermakna secara statistik apabila nilai  $p < 0,05$ .

**Hasil:** Didapatkan 50 subjek penelitian, terdiri dari pasien ALL anak dengan diare pasca kemoterapi dengan median usia 5(1-15) tahun dengan dominasi 56% laki-laki dan 44% perempuan. Didapatkan median kadar *fecal calprotectin* 97,95 (4,4-1000) mg/L. Pada penelitian ini didapatkan perbedaan kadar *fecal calprotectin* pada derajat diare pasca kemoterapi dengan  $p < 0,001$  dan terdapat perbedaan kadar FC pada tingkat keparahan ALL dengan  $p < 0,001$

**Simpulan:** Terdapat perbedaan kadar *fecal calprotectin* yang bermakna pada klasifikasi derajat diare pasien ALL anak pasca kemoterapi di RSUP Dr. Sardjito Yogyakarta.

**Kata Kunci:** diare pasca kemoterapi, ALL, *fecal calprotectin*, derajat

## ABSTRACT

### **Background:**

Post-chemotherapy diarrhea in pediatric Acute Lymphoblastic Leukemia (ALL) patients is quite common and can cause life-threatening health problems. The National Cancer Institute (NCI) divides post-chemotherapy diarrhea into 5 degrees of severity which have symptoms varying from mild, moderate and can even cause physiological disorders and hemodynamic collapse. Post-chemotherapy diarrhea must be differentiated based on the degree of diarrhea because it can affect the next dose of chemotherapy, delay or stop chemotherapy. Currently there are no diagnostic biomarkers to differentiate the degree of post-chemotherapy diarrhea. Post-chemotherapy diarrhea occurs due to inflammation caused by chemotherapy drugs. Fecal calprotectin(FC) is a marker of inflammation in the intestine. These inflammatory markers in post-chemotherapy diarrhea and their levels in various degrees of post-chemotherapy pediatric ALL patients have never been studied. A study is needed that analyzes FC levels and the differences in various degrees of diarrhea in pediatric ALL patients after chemotherapy at RSUP Dr. Sardjito

### **Objective:**

To determine the differences in *fecal calprotectin* levels in various grades of post-chemotherapy diarrhea in pediatric ALL patients at RSUP Dr. Sardjito.

### **Method:**

This research was an observational study with a cross-sectional approach with research subjects involving post-chemotherapy ALL pediatric patients with various degrees of diarrhea who underwent laboratory examinations at the Integrated Cancer Center of Dr. RSUP. Sardjito Yogyakarta. Fecal calprotectin levels were examined from patient fecal samples using the quantitative ELISA method. Next, a test of differences in FC levels was carried out in the classification of the degree of post-chemotherapy diarrhea with a p value  $<0.05$  determined to be statistically significant. This data analysis was used SPSS version 25 software. Data on the characteristics of research subjects were presented descriptively. Categorical data was presented in the form of proportions. Data distribution was checked with the Kolmogorov-Smirnov test. Differences in fecal FC levels were analyzed using the Kruskal-Wallis test, and then post-hoc analysis of FC levels between each grade was performed. The results of the difference test were said to be statistically significant if the p value is  $<0.05$ .

**Results:** There were 50 research subjects, consisting of pediatric ALL patients with post-chemotherapy diarrhea with a median age of 5 (1-15) years with a predominance of 56% male and 44% female. The median FC level was found to be 97.95 (4.4-1000) mg/L. In this study, there was a difference in FC levels in the degree of post-chemotherapy diarrhea with  $p < 0.001$  and there was a difference in FC levels in the severity of ALL with  $p < 0.001$ .

**Conclusion:** There were significant differences in FC levels in the classification degrees of diarrhea in pediatric ALL patients after chemotherapy at Dr. RSUP. Sardjito Yogyakarta.

**Keywords:** post-chemotherapy diarrhea, ALL, *fecal calprotectin*, grades