

ABSTRACT**The Role of IL-1 β , IL-10, IFN- γ and Neutrophil in Ischemic Stroke****OS Hartanto**

The pathogenesis of stroke involves inflammatory process, in which cytokine plays an important role. This study was aimed to disclose the role of cytokine, IL-1 β , IFN- γ , IL-10, and neutrophil.

This was an observational study using comparative cross-sectional approach. In this study, the ischemic stroke case group consisted of 30 individuals aged between 40 - 80 years, and control group consisted of 28 individuals, matched to case group in age, sex, and race. Samples were taken from Dr Moewardi Hospital, Solo, from January to May 2002 by means of all purposive random sampling. The homogeneity of case and control groups were tested, and the result revealed that both groups were homogeneous.

Blood examination was carried out in famous and experienced private laboratories in Solo and Jakarta. Cytokine levels were measured using Elisa from venous blood of each subject. CT-scan without contrast was also performed to case group.

Multivariate analysis was done to find the difference among the cytokines of IL-1 β , IL-10, IFN- γ and neutrophil in control group to disclose the role of cytokines as a whole in both groups. Discriminant analysis was undertaken to find the role of cytokines as discriminator. The contribution of cytokines function as discriminator was obtained by multiplying cytokine level with Wilks Lambda discriminant coefficient. The discriminant pattern in both groups were as follows: In case group, the mean and SD of IL-10 was 1.7590 and 18115, those of IL-1 β was 2406 and 18001, and those of neutrophil was 374857 and 76644. In control group, the mean and SD of IL-10 was 0.2423 and 0.2254, those of IL-1 β was 0.3818 and 0.3266, and those of neutrophil was 269293 and 31284.

Results revealed significant difference among the cytokines and neutrophil simultaneously between case and control groups. Three discriminators obtained from discriminant analysis were neutrophil, IL-1 β , and IL-10, from which the strongest was neutrophil. The differential level of both groups were 73.7%.

As conclusions, there is an increase of IL-1 β , IL-10, and neutrophil in patients with acute ischemic stroke. IL-1 β , IL-10, and neutrophil are discriminators that differentiate patients with ischemic stroke from normal individuals. From those variables, neutrophil is found to be the predominant discriminator.

Keywords: *ischemic stroke, cytokines, neutrophil*