

INTISARI

STUDI RESPON IMUN SELULER TERHADAP INFEKSI INTRAPERITONEAL *ENTEROTOXIGENIC Staphylococcus aureus* PADA MENCIT *Balb/c*

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Respons imun seluler pada hospes dapat teraktivasi akibat dari infeksi bakteri. Dalam penelitian ini ingin diketahui respon imun seluler *Staphylococcal enterotoxin B* (SEB) pada mencit *Balb/c*. Dua kelompok mencit jantan *Balb/c* digunakan. Setiap kelompok terdiri dari enam mencit berumur lapan minggu, dan dilabel sebagai kelompok "Kontrol" dan "Uji". Infeksi SEB dilakukan secara intraperitoneal dengan volume 200 μ L dengan konsentrasi suspensi 10^8 pada H-0 dan infeksi berikutnya dengan volume 600 μ L dengan konsentrasi suspensi 10^8 pada H-13. Sampel darah dari enam mencit dikoleksi melalui pleksus *retro orbitalis* pada H-1, H-4, H-6, H-14, dan H-22. *Leucocytes differential count* dihitung secara manual dan dibandingkan dengan menggunakan perhitungan statistik. Peningkatan neutrofil muda dan limfosit nyata terlihat. Pada H-1, H-4, dan H-6 menunjukkan perbedaan yang signifikan dari jumlah leukosit terhitung dengan nilai H-1 $2,67 \times 10^3 \text{ mm}^{-3}$, H-4 $4,12 \times 10^3 \text{ mm}^{-3}$, dan H-6 $5,08 \times 10^3 \text{ mm}^{-3}$. Hasil penelitian menunjukkan adanya peningkatan pada produksi dan sirkulasi neutrofil muda ($0,00 \times 10^3 \text{ mm}^{-3}$ pada H-0 ke $0,52 \times 10^3 \text{ mm}^{-3}$ pada H-22), eosinofil ($0,04 \times 10^3 \text{ mm}^{-3}$ pada H-1 ke $0,25 \times 10^3 \text{ mm}^{-3}$ pada H-22), monosit ($0,18 \times 10^3 \text{ mm}^{-3}$ pada H-1 ke $0,37 \times 10^3 \text{ mm}^{-3}$ pada H-22), dan limfosit ($1,80 \times 10^3 \text{ mm}^{-3}$ pada H-1 ke $3,77 \times 10^3 \text{ mm}^{-3}$ pada H-6) di pembuluh darah perifer setelah infeksi bakteri. Tiga mencit dieutanasi menggunakan kloroform dan dinekropsi pada H-7, dan tiga lagi pada H-22 dan perubahan histopatologi organ ginjal dan hati diamati. Pemeriksaan histopatologi menunjukkan infiltrasi leukosit di ginjal dan hati, serta erosi membrana mukosa epitel organ. Ada juga infiltrasi leukosit dan erosi pada membrana mukosa epitel organ.

Kata kunci : *Staphylococcus aureus*, *Enterotoxin B*, *Balb/c*, intraperitoneal, hematologi, histopatologi

ABSTRACT

STUDY OF CELLULAR IMMUNE RESPONSE FROM INTRAPERITONEAL POST-ADMINISTRATION OF ENTEROTOXOGENIC *Staphylococcus aureus* IN *Balb/c* MICE

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Bacterial infections commonly will activate the cellular immune response of the infected hosts. Our laboratorial observations suggested that staphylococcal enterotoxin B (SEB) do have a prognostic differences in the cellular immune response. Two groups of male Balb/c mice were used. Each group consisted of six mice aged eight weeks, of which labelled as the “Control” group and the “Test” group. Infection of SEB were carried out intraperitoneally with the volume of 200 μL with the concentration of the suspension 10^8 on D-0 and a subsequent infection of SEB with the volume of 600 μL with the concentration of the suspension 10^8 on D-13. Blood samples were collected through the retro-orbital plexus on Day-1, D-4, D-6, D-14, and D-22. Leucocytes differential count were summed manually and compared using statistics. Leucocytes differentials were counted and the results between “Control” group and “Test” group were compared. Increased of band neutrophils (from $0.00 \times 10^3 \text{ mm}^{-3}$ in D-0 to $0.52 \times 10^3 \text{ mm}^{-3}$ in D-22), eosinophils (from $0.04 \times 10^3 \text{ mm}^{-3}$ in D-1 to $0.25 \times 10^3 \text{ mm}^{-3}$ in D-22), monocytes (from $0.18 \times 10^3 \text{ mm}^{-3}$ in D-1 to $0.37 \times 10^3 \text{ mm}^{-3}$ in D-22), and lymphocytes (from $1.80 \times 10^3 \text{ mm}^{-3}$ in D-1 to $3.77 \times 10^3 \text{ mm}^{-3}$ in D-6) were markedly seen. D-1, D-4, and D-7 showed significant differences of total leucocytes count of $2.67 \times 10^3 \text{ mm}^{-3}$, $4.12 \times 10^3 \text{ mm}^{-3}$, $5.08 \times 10^3 \text{ mm}^{-3}$ respectively. Three mice were necropsied on D-7, and another three on D-22 to observed histopathological changes in the kidney and liver. Histopathological examination showed infiltration of leucocytes in kidney and liver, as well as erosion of the epithelial mucosal membrane of the organs. There are significant increased on the production and circulation of peripheral band neutrophils and lymphocytes following bacterial infection. There are also infiltration of leucocytes and erosion of the epithelial mucosal membranes of the organs.

Keywords : *Staphylococcus aureus*, *Enterotoxin B*, *Balb/c*, intraperitoneal, haematology, histopathology