

Aktivitas spesifik katalase jaringan hati tikus yang diinduksi hipoksia hipobarik akut berulang = Specific activity of catalase in hypobaric hypoxia-induced rat liver

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Abstrak

Hipoksia pada ketinggian diketahui menyebabkan stress oksidatif. Dilakukan penelitian mengenai aktivitas spesifik katalase pada jaringan hati tikus dengan metode spektrofotometri untuk mengukur pemecahan hidrogen peroksida. Tikus dipajankan pada hipoksia hipobarik akut berulang dengan simulasi ketinggian 35,000 kaki yang diturunkan bertahap ke ketinggian 25,000 kaki, 20,000 kaki, lalu 18,000 kaki. Hewan uji dibagi ke dalam 4 kelompok: 1) diberi 1 kali perlakuan, 2) diberi 2 kali perlakuan, 3) diberi 3 kali perlakuan, 4) diberi 4 kali perlakuan, dengan setiap prosedur diselingi periode normoksia selama 7 hari. Hipoksia menyebabkan penurunan aktivitas spesifik katalase pada semua kelompok uji. Penurunan bermakna didapatkan pada kelompok 2 ($p = 0.008$), 3 ($p = 0.008$), dan 4 ($p = 0.008$). Hasil pada kelompok 1 tidak menunjukkan perbedaan bermakna dibandingkan kontrol ($p = 0.548$). Hipoksia hipobarik menginduksi penurunan aktivitas spesifik katalase hati.

.....Hypoxia at high altitude is known as a cause of oxidative stress. Specific activity of catalase in rat liver submitted to recurrent acute hypobaric hypoxia were studied by means of measuring the breakdown of hydrogen peroxide spectrophotometrically. Animals were submitted to simulated altitudes of 35,000 ft lowered gradually to 25,000 ft, 20,000, and 18,000 ft. The experimental groups were as follows: 1) rats exposed to one procedure, 2) exposed to two procedures, repeatedly, 3) exposed to three-times of procedures, and 4) exposed to four-times of procedures, each procedure was interrupted with 7 days period of normoxia. Hypoxia produced a decrease in specific activity of liver catalase in all experimental groups. Significant decreases were showed in group 2 ($p = 0.008$), 3 ($p = 0.008$), and 4 ($p = 0.008$). Group 1 showed no significant difference compared to control group ($p = 0.548$). Hypobaric hypoxia induces a decrease in the specific activity of catalase in rat liver.