

**RINGKASAN**

Penelitian ini membahas efek oksigenasi dalam menurunkan kadar HbCO. Rancangan penelitian adalah “The Randomized pre test-post test controle group design”. Pelaksanaan dari penelitian ini menggunakan Ruang Udara Bertekanan Tinggi (RUBT) bertempat di Lembaga Kesehatan Kelautan.

Populasi penelitian ini adalah petugas juru parkir di Plasa Tunjungan Surabaya, laki-laki, usia antara 24-37 tahun, berbadan sehat, berat badan normal. Jumlah sampel masing-masing kelompok 8 orang sehingga jumlah sampel seluruhnya 16 orang yang diambil secara “systematic random sampling”. Pada kedua kelompok, setelah selesai melaksanakan tugas (telah terpapar CO) maka dilakukan pengukuran kadar HbCO darah. Pada kelompok kontrol (NONB), pada kondisi normobarik normoksi 1 ATA, bernafas dengan udara biasa, setelah 2 jam kemudian dilakukan pemeriksaan kadar HbCO. Sedangkan pada kelompok yang mendapat perlakuan (OHB), pada kondisi hiperbarik hiperoksi dengan tekanan 2,4 ATA, dosis tunggal, bernafas dengan oksigen 100 % selama 30 menit 3 kali, tiap interval 5 menit istirahat bernafas dengan udara biasa, kemudian dilakukan pemeriksaan kadar HbCO. Penilaian keluhan kesehatan berkaitan dengan intoksikasi CO dilakukan dengan pengisian kuesioner.

Hasil penelitian menunjukkan bahwa kadar HbCO pada kelompok NONB setelah bertugas  $3,6513 \% \text{ COHb} \pm 0,8289$ , dan setelah 2 jam diperiksa kembali kadar HbCOnya  $3,9825 \% \text{ COHb} \pm 0,6189$ . Sedangkan pada kelompok OHB kadar HbCO setelah bertugas  $4,1575 \% \text{ COHb} \pm 0,3709$  dan setelah diterapi OHB kadar HbCOnya  $1,0763 \% \text{ COHb} \pm 0,5933$ . Terdapat perbedaan bermakna pada kadar

HbCO akhir antara kelompok NONB dan OHB ( $p=0,000$ ). Kadar HbCO darah juru parkir sebelum dan sesudah perlakuan, pada kelompok NONB tidak menunjukkan perbedaan bermakna ( $p=0,409$ ) sedangkan pada kelompok OHB menunjukkan perbedaan yang bermakna ( $p=0,000$ ). Sedangkan hasil kuesioner keluhan kesehatan pada kelompok perlakuan OHB menunjukkan berkurangnya gejala ( $p=0,018$ ).

Dari analisis diatas, dapat disimpulkan bahwa paparan dosis tunggal OHB menggunakan oksigen 100 % dengan tekanan 2,4 ATA selama 30 menit 3 kali, tiap interval 5 menit bernafas dengan udara biasa dapat menurunkan kadar HbCO dalam darah responden secara bermakna, juga penurunan keluhan kesehatan responden setelah bertugas dengan setelah diterapi OHB.



**ABSTRACT**

The purpose of this research was to determine the effects of hyperbaric oxygenation (HBO) to decrease carboxy haemoglobin (COHb) level. This study was held at The Naval Health Institute by using the Hyperbaric Chamber.

For this purpose, 16 clinically healthy men, 24-37 years old, were chosen randomly from the population of the parking workers. Afterwards, these 16 men were divided into 2 groups, that is : normobaric normoxic group (NBNO) as control group (CG) and hyperbaric oxygenation group (HBO) as treatment group (TG). This study were done once. The COHb level were taken in both groups after they finished their work. After that, NBNO group were exposed to air at 1 ATA, for 2 hours and HBO group were exposed to 100% O<sub>2</sub> at 2,4 ATA, 30 minutes 3 times, with each interval 5 minutes inhale air. Then, COHb level were taken again in both groups.

The result showed that COHb level on NBNO group before exposure was 3,6513 % COHb  $\pm$  0,8289 and after 90 minutes exposure was 3,9825 % COHb  $\pm$  0,6189 while COHb level on HBO group before exposure was 4,1575 % COHb  $\pm$  0,3709 and after 90 minutes exposure was 1,0763 % COHb  $\pm$  0,5933. The COHb level between NBNO group and HBO group after exposure differ significantly ( $p=0,000$ ). On NBNO group, the comparison between COHb level before and after exposure showed that there was no significant difference ( $p=0,409$ ), whereas on HBO group there was significant difference ( $p=0,000$ ). At the time that the result of signs and symptoms's questioner showed that after exposure was better than before exposure HBO ( $p=0,018$ ).

From the analysis above, we conclude that HBO single dose with the pressure 2,4 ATA for 3 times 30 minutes with interval 5 minutes inhale air could decrease COHb level in blood of respondent significantly, and also decrease of signs and symptoms's questioner of respondent between after working and after the treatment of HBO.

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Key words: Hyperbaric oxygenation, COHb level

