

ABSTRACT

CO or known as Carbon monoxide gas is a colorless and odorless substance which is toxic to humans. Gas CO is formed from incomplete combustion. The material that contain carbon monoxide is motor vehicle emission. This study aimed to analyze the relationship between CO gas that also known as Carbon monoxide gas in the air with COHb level of blood parking basement officers in Surabaya "x" mall.

This study was observational with cross sectional design and analyzed through Chi-Square test. The number of samples used was 15 parking basement officers and a control group of 15 people as a comparison. Available data was presented in the form of frequency distribution and analyzed through Chi-Square test.

The results of measurement of CO gas levels in 3 parking points were more than quality standards which refers to the East Java Governor Regulation No. 10 of 2009 and 3 points in the control area were below the quality standard. All number of samples in the parking basement officers had COHb levels of $>5\%$ and for control areas there were 11 people had COHb levels of $<5\%$ and 4 people had COHb levels of $>5\%$. Based on the results, it meant there was a correlation between the characteristics of individuals with COHb levels, such as duration of work ($p = 0.04$), nutritional status ($p = 0.047$) and smoking habits ($p = 0.046$), while age ($p = 0.070$) and PPE use ($p = 0.128$) there were no significant correlation. In addition, there was a relationship between CO gas levels and blood COHb levels in parking basement officers ($p = 0.00$), also there was a distinction between COHb level of blood parking basement officers in the "x" mall building with the control group with a value of $p = 0.00$.

This study can be concluded that the basement parking of "x" mall building is contaminated with CO gas because it hasn't been met quality standards and the entire sample of parking basement officers had COHb level of $>5\%$. Based on the results, the suggestions can be given by the researcher for parking officers are to reduce smoking, go to places with more oxygen, maintain diet and exercise regularly and the suggestion can be given by the researcher for agencies is to maintenance and add ex-haust fans in order to the movement of air in the basement goes well.

Keywords : CO gas levels, COHb level of blood, basement parking, Mall

ABSTRAK

Gas CO merupakan zat tidak berwarna dan tidak berbau yang beracun bagi manusia. Gas CO terbentuk dari suatu kegiatan pembakaran tidak sempurna bahan yang mengandung karbon seperti kendaraan bermotor. Tujuan penelitian ini adalah menganalisis paparan gas CO (karbon monoksida) di udara dengan kadar COHb darah petugas parkir *basement* Gedung Mall "X" di Surabaya.

Penelitian ini bersifat observasional dengan desain cross sectional. Sampel penelitian ini adalah 15 petugas parkir di *Basement* dan kelompok kontrol 15 orang sebagai pembanding. Data yang tersedia disajikan dalam bentuk distribusi frekuensi dan dianalisis menggunakan uji Chi-Square.

Hasil pengukuran kadar gas CO di 3 titik tempat parkir lebih dari baku mutu menurut Pergub Jatim No 10 tahun 2009 dan 3 titik di area kontrol di bawah baku mutu. Seluruh sampel petugas parkir memiliki kadar COHb $\geq 5\%$ dan untuk area kontrol terdapat 11 orang $< 5\%$ dan 4 orang $> 5\%$. Terdapat hubungan karakteristik individu dengan kadar COHb meliputi lama bekerja ($p < 0,05$), kebiasaan merokok ($p < 0,05$), dan status gizi ($p < 0,05$). Sedangkan jenis kelamin ($p = 1,00$), usia ($p = 0,07$) dan pemakaian APD ($p = 0,03$) tidak ada hubungan yang signifikan. Selain itu ada hubungan antara kadar gas CO dan Kadar COHb darah di petugas parkir ($p = 0,00$). Serta terdapat perbedaan antara COHb petugas parkir *basement* gedung Mall "X" dengan kelompok kontrol dengan nilai $p = 0,00$.

Kesimpulan bahwa parkir basement gedung Mall X tercemar gas CO karena belum memenuhi baku mutu dan seluruh sampel petugas parkir basement memiliki kadar COHb $> 5\%$. Saran bagi petugas parkir untuk mengurangi konsumsi merokok, pergi ketempat dengan oksigen yang lebih banyak, menjaga pola makan dan olah raga secara teratur. Bagi instansi untuk melakukan perawatan dan penambahan *exhaust fan* agar pergerakan udara di basement berjalan dengan baik.

Kata kunci : Kadar gas CO, COHb darah, parkir basement, Mall