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Screening of high-risk occupational poisoning group by using nationwide data: Methanol poisoning case in Korea

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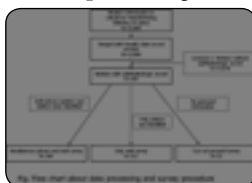
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Purpose: Acute visual impairment due to exposure methanol occurred continuously in 7 workers of mobile phone factories, in Korea 2015. The purpose of this study is to screen high-risk group and prevent further blindness by early intervention.

Methods: Information of total 12,048 workers who have possibility to be exposed methanol from mobile phone manufacturing (2012~2017) were provided by the Ministry of Employment and Labor of Korea. Worker's information was merged with benefit claim record (2002~2015) of National Health Insurance Service and the workers who were diagnosed as visual impairment, blindness, optic neuritis were selected. Through the telephone and mail survey procedure, methanol poisoning high-risk group were screened among workers with ophthalmologic disease.

Results: 430 workers (244 men, 186 women) with ophthalmologic disease were identified from merged data and the survey was conducted on 415 of them. The respondents were 48(11.6%). Among respondents, 10 (26.3%) and 15 workers (40.5%) experienced cell phone display cleaning and methyl alcohol use, respectively. 10 workers(20.8%) were identified as ophthalmologic disease and visual impairment was the most common(7 workers, 14.6%). Five workers with visual impairment were identified in women, which was high as 20.8% among all female respondents. 10 workers with apparent past history of methanol exposure were selected as final high-risk group and they are now under management in order to prevent further blindness outbreak.

Discussion: This study is meaningful because we prevent 10 workers of methanol poisoning high-risk group from disease aggravation. And we identified them from nationwide health insurance data. If the same system like present study is applied to occupational poisoning other than methanol case, another poisoning outbreak can be prevented in advance.



Recent Publications:

1. Ryu J, Lim KH, Ryu DR et al. Two cases of methyl alcohol intoxication by sub-chronic inhalation and dermal exposure during aluminum CNC cutting in a small-sized subcontracted factory. *Annals of Occupational and Environmental Medicine*. 2016; 28: 65.
2. Bebarta VS, Heard K, Dart RC. Inhalational abuse of methanol products: elevated methanol and formate levels without vision loss. *Am J Emerg Med*. 2006; 24(6): 725-728.
3. Bitar ZI, Ashebu SD, Ahmed S. Methanol poisoning: Diagnosis and management. A case report. *Int J Clin Pract*. 2004; 58(11): 1042-1044.
4. Coulter CV, Farquhar SE, McSherry CM et al. Methanol and ethylene glycol acute poisonings - predictors of mortality. *Clin Toxicol(Phila)*. 2011; 49(10): 900-906
5. Desai T, Sudhalkar A, Vyas U, Khamar B. Methanol poisoning: Predictors of visual outcomes. *JAMA Ophthalmol*. 2013; 131(3): 358-364.

Biography

Huisu Eom graduated from Kyungpook National University Medical School. He is now receiving residency training at Occupational Safety and Health Research Institute in Korea.

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