

عنوان مقاله:

Evaluation of Toluene Exposure in Workers at Industrial Area of Sidoarjo, Indonesia by Measurement of Urinary Hippuric Acid

محل انتشار:

مجله سم شناسی پزشکی آسیا اقیانوسیه, دوره 2, شماره 4 (سال: 1392)

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نویسندگان:

Moch Sahri - Department of Occupational Health and Safety, Department of Public Health, Airlangga University, Surabaya, Indonesia

Noeroel Widajati - Department of Occupational Health and Safety, Department of Public Health, Airlangga University, Surabaya, Indonesia

خلاصه مقاله:

Background: Toluene is a harmful substance still being used as a solvent and catalyst in many industries that can increase the level of urinary hippuric acid (UHA). This study was designed to examine the level of toluene and UHA among workers of industrial site in seven companies in Sidoarjo, Indonesia and to analyze the risk factors for abnormal UHA. Methods: This study was an analytical cross-sectional study conducted during August to September 2008. The locations were selected based on the fact that toluene was utilized in the production process of these companies. Urinary hippuric acid was analyzed with screen spectrophotometer 3000 on obtained urine samples from workers. Urinary hippuric acid of higher than 1.6 g/g creatinine was considered as abnormal. Workers' characteristics were collected via questionnaires completed by the workers. Toluene in workplace air was obtained with the reagent tube and the samples were analyzed using gas chromatography. Results: In total, 96 subjects were studied. Workers examined in this study suffered from watery eyes, shortness of breath, cough, runny nose, fatigue, and skin irritation. Urinary hippuric acid level was normal in 91 workers (95%). Five subjects had abnormal levels of urinary hippuric acid. Levels of toluene in workplace air at all companies were below the ratified governmental regulatory threshold value (< 50 ppm) with the maximum level of 28.1 ppm. Abnormal HPA was higher in workers with older ages, lower educational attainments and not using the personal protective equipment (PPE). Conclusion: Toluene concentration in the air of the ink, paint and printing companies in Sidoarjo, Indonesia was within ratified limit. Workers with older ages, lower educational attainment and not using the PPEs are probably more vulnerable to toluene toxicity. How to cite this article: Sahri M, Widajati N. Evaluation of Toluene Exposure in Workers at Industrial Area of Sidoarjo, Indonesia by .Measurement of Urinary Hippuric Acid. Asia Pac J Med Toxicol 2013;2:145-9

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Hippuric Acid, Indonesia, occupational exposure, Toluene

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