

Health hazards among a sample of workers exposed to a combination of noise and organic solvents in a fermentation factory in Egypt

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Abstract :

Exposure to noise can induce hearing impairment among industrial workers. Studying the impact of combined exposure to both industrial pollutants such as noise and organic solvents on hearing was scarcely pointed. The aim was to study the risk of hearing loss among a sample of fermentation plant workers in Egypt exposed to both noise and a mixture of organic solvents. Materials and Methods: The exposed group consisted of 110 workers in a fermentation plant divided into two groups. Group A (50 workers,) exposed to noise only, group B (60 workers) exposed to noise and mixture of organic solvents, The control group (group C;30 workers) were matched to the exposed group in age, sex, socioeconomic status, smoking habit and systolic blood pressure but were neither exposed to noise nor organic solvents. All studied sample were subjected to complete medical examination and audiometric examination using pure tone Audiometer (GS.Model 1703). The characteristic V-notch in the audiogram was used as early sign of hearing loss. Noise level at work place was carried out using a calibrated Precision sound level meter type 2232. Results: Noise level was comparable in groups A&B but significantly higher than in control work places. Thirty six percent of exposed workers suffered from hearing loss versus 3.3 percent in the control group ($p < 0.001$). Hearing loss was significantly higher among group B (24%) than group A (18%) ($p < 0.05$). Results showed that both exposed groups had higher hearing loss than normal control. Workers exposed to both noise and organic solvents suffered from the highest proportion of hearing loss compared to those exposed to noise alone, therefore we concluded that solvents may interact synergistically with noise. [Nature and Science 2010;8(6):95-99]. (ISSN: 1545-0740).

Key Word :

Noise- organic solvents- hearing loss

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