

Penyakit paru dan gangguan faal paru pada tenaga kerja di pabrik semen

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Abstrak

Ruang Lingkup dan Cara Penelitian: Dalam proses produksinya suatu pabrik semen telah menyebabkan pencemaran limbah debu di lingkungan kerjanya. Hal ini menunjukkan bahwa disamping manfaatnya dalam pembangunan, proses produksi semen juga dapat mengganggu kesehatan paru tenaga kerja. Berhubung masih terdapat kontroversi mengenai jenis kelainan paru yang disebabkan debu semen, maka dilakukan penelitian di pabrik semen. Tujuan penelitian adalah untuk memperoleh data mengenai prevalensi penyakit dan gangguan faal paru di kalangan tenaga kerja Plant III/IV pabrik semen dan kadar debu rata-rata dimana tenaga kerja- terpapar, serta melihat hubungan antara kadar debu dan lama paparan dengan prevalensi tersebut. Secara deskriptif menggunakan disain 'cross sectional' telah diperiksa sejumlah 176 tenaga kerja laki-laki berumur 18-55 tahun dan telah bekerja selama 2 tahun. Pemeriksaan dilakukan dengan menggunakan kuesioner, pemeriksaan fisik, faal paru dan foto toraks. Pengukuran kadar debu dilakukan dengan teknik 'low volume dust sampler' sedangkan untuk silika bebas dengan mikroskop polarisasi.

Hasil dan Kesimpulan: Kadar silika bebas di beberapa tempat menunjukkan kadar >1% dan kadar debu di beberapa tempat melebihi NAB. Prevalensi penyakit yang ditemukan rendah sekali, yaitu silikosis 1,13%, tersangka silikosis 1,7%, asma 0,6%, TB 3,4%, sedangkan bronkitis dan emfisema tidak ditemukan. Gangguan faal restriktif ditemukan sebesar 19,9% dan gangguan obstruktif 2,3%. Tidak ditemukan hubungan antara besar risiko dengan gangguan faal paru dan prevalensi penyakit. Demikian pula tidak ditemukan hubungan antara gangguan faal paru dengan kelainan radiologis, umur dan kebiasaan memakai pelindung. Terdapat hubungan antara kebiasaan merokok dan gangguan faal paru; gangguan restriktif lebih banyak ditemukan pada bukan perokok ($p < 0,05$).

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Pulmonary Diseases And Lung Function Abnormalities Among Workers At A Cement Factory
Scope and Method of Study: The main hazard during cement processing is dust. This indicates that besides its benefit on our National Development, the cement industry may have some drawbacks on our workers' health. A cement factory was surveyed, since there are still different opinions on the pulmonary effects of cement dust until now. The aim of this study is to measure the level of dust exposure and the silica content at Plant II/IV of the factory, to study the prevalence of pulmonary diseases and lung function abnormalities of cement workers at Plant III/IV and to observe if there is any relationship between both studies. In this cross-sectional study, 176 cement workers of Plant II/IV aged between 18 to 55 years were surveyed. A questionnaire, physical examination, chest roentgenogram and Spiro gram were obtained on each person. Dust concentrations were measured with a low volume dust sampler and free silica was measured with a polarizing microscope.

Findings and Conclusions: At some workplaces the dust and silica concentrations were above the threshold limit value. The overall prevalence rate of silicosis was 1.13%, suspect silicosis 1.7%, tuberculosis 3.4% and

asthma 0.6%, while no signs of bronchitis and emphysema were noted. The vital capacity in 19.9% workers and the FEV1 in 2.3% workers was reduced. No relationship was noted between dust exposure, pulmonary diseases and lung function abnormalities. Neither was there any relationship noted between lung functions abnormalities, smoking habits, roentgen graphic changes, age and the usage of respiratory protective. A significant relationship was noted between smoking habits and lung function abnormalities; restrictive impairments were most pronounced in nonsmokers ($p < 0.05$).