

Silicosis Mortality With Respiratory Tuberculosis In The United States, 1979–2006

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Rationale

Silicosis, a preventable occupational lung disease is associated with various diseases including tuberculosis (TB). Although, deaths with silicosis and respiratory tuberculosis (TB) in the United States have considerably declined, they still occur. Tuberculin-positive persons with silicosis have 30 times higher risk of developing active TB as compared to a control population.

Methods

We describe silicosis-TB deaths using the 1979–2006 National Center for Health Statistics mortality data for decedents aged ≥ 25 years. We calculated proportionate mortality ratios (PMRs) using available information on the decedents' industry and occupation reported from 26 states for 1985–1999.

Results

Of 7,505 deaths with silicosis, 311 (4.1%) had concurrent TB; 248 (79.9%) were ≥ 65 years; 306 (98.4%) were males, and 221 (71.1%) were whites. Silicosis-TB deaths were more likely to occur among silicosis decedents aged 25–44 than among those aged ≥ 45 years (8.0% vs. 4.1%; $p=0.02$) and among black silicosis decedents than among those of all other races (8.0% vs. 3.5%; $p<0.01$). Silicosis-TB deaths declined 94.3% ($p<0.01$ for time-related trend) from 21.0 per year during 1979–1983 to 1.2 per year during 2002–2006. Silicosis-TB deaths reported from Ohio ($n=35$; 11.3%), Pennsylvania ($n=33$; 10.6%), and Michigan ($n=24$; 7.7%) accounted for 29.6% of all such deaths in the United States. The highest industry-specific and occupation-specific PMRs for silicosis-TB deaths were associated with the miscellaneous nonmetallic mineral and stone products industry (73.7; 95% CI 33.8–139.8) and the crushing and grinding machine operators occupation (142.3; 95% CI 57.2–293.5).

Conclusions

Silicosis-TB mortality declined substantially; younger and black workers with silicosis appear to have higher risk of mortality associated with TB. Prevention and control measures for TB and silica exposure have helped in accomplishing this low rate of silicosis-TB in the United States.

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