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The Role of Asbestos in PSA-related Prostate Pathologies

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In addition to increasingly aging populations and more sensitive diagnostic techniques, epidemiologists have suggested that pollutants exposure may play a role in the observed worldwide increased incidence in prostate pathologies. Although positive correlations between asbestos exposure and prostate cancer have been reported in numerous studies, asbestos was never formally linked to prostate cancer. A national cohort of sheet metal workers was made available to us for a targeted analysis looking at the influence of known determinants of prostate pathology and quantified asbestos exposure on PSA levels. The database consists of data gathered from 10,395 sheet metal workers who were first employed at least 20 years before examination. The analysis was performed on a population sample screened between June '03 and November '04. During this period 93% or 453 subjects were screened for PSA. Analysis: The final regression model was found to fit the PSA values distribution ($P < 0.0001$) and to predict individual PSA with an adjusted r-square of 0.1133, but was only found statistically significant for age and diastolic blood pressure, a measure of metabolic dysfunction. Conclusion: The predicted relationship between asbestos and prostate cancer was not found on a regression analysis using PSA level as a surrogate to prostate pathology and age at first exposure to asbestos as a surrogate of cumulative exposure to asbestos. It is therefore thought that PSA measurements may not correlate with prostate pathologies as asbestos may induce neoplastic growth independently of androgen receptor stimulation and PSA secretion.