An Ecological Epidemiology Investigation of Talc Consumption in the US and Trends in Female Cancer Rates

Poster Presentation at Society of Toxicology 57th Annual Meeting
March 11-15, 2018
San Antonio, Texas

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Abstract:
Some investigators have suggested that personal cosmetic talc use is a risk factor for mesothelioma and ovarian cancer, while others maintain that the weight of evidence clearly establishes that cosmetic talc does not increase the risk of either disease. In this evaluation, we assessed the temporal association between U.S. cosmetic talc consumption and the incidence of mesothelioma and ovarian cancer in females. A similar investigation comparing peak asbestos consumption rates in the US demonstrated a corresponding peak in incidence of mesothelioma in males after an appropriate latency period. In this analysis, we evaluated cancer incidence in women because 1) many talc-containing products are marketed specifically for use by women, and 2) women are less likely to have experienced significant (confounding) workplace exposures to asbestos. Cosmetic talc usage rates by year (metric tons per year from 1975 to 2003), which were compiled by the United States Geological Survey (USGS), indicate that product use peaked in 1977 at approximately 70,000 metric tons per year and was never less than 16,000 metric tons per year during that time frame. Throughout the post-1975 time frame, several studies have reported that the rates of pleural and peritoneal mesothelioma in women has remained constant. Our evaluation of the Surveillance, Epidemiology, and End Results (SEER) 9 cancer registry data (1973-2014) is consistent with these findings and shows an age-adjusted incidence rate of mesothelioma in women in the range of approximately 2.5 to 4.9 per million. Similarly, age-adjusted incidence rates in the SEER registry for ovarian cancer remained stable over the last several decades, and have actually declined somewhat from approximately 16 annual cases per 100,000 in 1975 to 11 annual cases per 100,000 in 2014. We suggest that if cosmetic talc use was truly a significant risk factor for either disease, then given the decades of documented extensive use, an observable increase in these diseases would have been observed at some point in the last 10 to 20 years. These findings are consistent with the National Occupational Mortality Surveillance (NOMS) database, which has consistently reported no increased incidence of female pleural or peritoneal mesothelioma in occupations that are expected to routinely use cosmetic talc, such as hairdressers, barbers, and cosmetologists.