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EDITORIAL

Asbestos, the deadly fiber

Asbesto, la fibra asesina

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Asbestos is a group of six naturally occurring fibrous minerals that have been used to make a wide variety of products, mainly construction materials, friction materials, heat-resistant fabrics, packaging, gaskets, and coatings, due to their heat and corrosion-resistant properties.[1,2] Exposure to this material entails a serious health risk, as it can cause diseases such as asbestosis, lung cancer, mesothelioma, among others.[1-3] Consequently, there is a growing trend towards stricter regulations on its use, and over 70 countries have implemented a ban on it.[4]

In this regard, Ramada-Rodilla *et al.*,[5] in an umbrella review that included 196 articles published between 1980 and 2021, found that the risk of lung cancer and mesothelioma is low at daily asbestos exposure levels <0.1 f/mL, and this exposure limit, with some variations, has been adopted in several European countries for many years. However, the authors concluded that banning all exposure to this material is the best measure to prevent its negative impact on health. Likewise, West *et al.*,[6] in a follow-up study involving 26 397 asbestos-exposed sheet metal workers examined between 1986 and 2016 in the United States and Canada, found that workers who entered the trade after the implementation of the U.S. environmental and occupational regulations develop asbestos-related nonmalignant respiratory diseases at much lower rates compared with those who entered the trade prior to these regulations. All of this is evidence of the importance of regulatory intervention and ongoing surveillance of this material.

Asbestos has been listed as a group 1 carcinogen by the *Agency for Toxic Substances and Disease Registry*.[7] Accordingly, it has been reported that, worldwide, exposure to this material accounted for 34.52% and 36.80% of deaths related to occupational carcinogens in 2005 and 2015, respectively.[8] Moreover, Furuya *et al.*,[9] in a review article on asbestos-related diseases, reported that this material causes about 255 000 deaths (243 223-260 029) every year, of which 233 000 (22 322-242 802) occur due to occupational exposure. In practice, however, most cancers caused by asbestos are not reported, documented, or compensated financially, and in most countries none of these cases are properly identified and indemnified.[9]

In Latin America, a problem that exacerbates this situation is the quality of statistics on deaths from mesothelioma, as this diagnosis can be problematic.[10] According to data from the Colombian Ministry of Health and Social Protection, between 2009 and 2021, 6 435 people were treated in the country's health services for mesothelioma (International Classification of Diseases [ICD] 10 codes: C450, C451, C452, C457, and C459).[11] However, there is a huge discrepancy in the annual reporting of this data; for example, in 2009, only 139 people were treated in the country's health services due to mesothelioma, while in 2014 this figure rose to 1 532 people.

Patterns of mortality following asbestos exposure have been determined primarily through studies of individuals who have been exposed to asbestos in the workplace.[10] On the other hand, some review studies and/or meta-analyses have shown that non-occupational exposure to asbestos is also associated with an increased risk of mesothelioma and other conditions such as lung cancer and pleural and interstitial abnormalities.[12-16] This topic has been less studied than asbestos-related cancer from occupational exposure, which may be partially due to the challenges involved in measuring and classifying exposure that occurs outside the occupational setting.

In Colombia, the industrial use of asbestos began in 1942 with the first Eternit plant[2] and was regulated in 2011 by means of Resolution 007 issued by the Ministry of Health and Social Protection,[17] which adopted the Regulation on Hygiene and Safety of Chrysotile and Other Fibers of Similar Use under the concept of "safe use", which has been highly controversial. However, given that the adverse effects of asbestos were also documented in the country and that victims of asbestos, such as Ana Cecilia Niño, fought tirelessly to prevent its use,[2,18] Law 1968 was enacted in 2019,[19] providing that "as of January 1, 2021, it is prohibited to exploit, produce, commercialize, import, distribute or export any type of asbestos and of products made with asbestos in the national territory." This law was introduced taking into account that there is no safe threshold for exposure to asbestos fibers[20] and that all varieties of asbestos are carcinogenic to humans.[21]

Even though the ban on the use of asbestos in Colombia was an important step towards avoiding its adverse effects, it is still necessary to carry out studies to identify the places where there are still elements made with this material in order to define the best way to dismantle them and closely monitor the victims or people exposed to it. The purpose of this is to comply with Law 1968 of 2019[19] and to make this ban a reality, as in the European Economic Community countries, Australia, and Japan.

Before concluding, it is worth mentioning that asbestos exposure is a public health problem that can affect anyone, even celebrities. Steve McQueen, an acclaimed American actor and racing driver, died in 1980, at the age of 50, of lung cancer that is suspected to have developed from exposure to the material in his youth, when he worked removing insulation from pipes on a troop ship while serving in the Navy, and also because the suits he wore as a race car driver were coated with the material.

For this reason, environmental regulation and epidemiological surveillance must be strengthened, both in Colombia and worldwide, to control asbestos exposure and prevent associated diseases, including the deadly mesothelioma.

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