

Asbestos is a fibrous silicate mineral that has been extensively used worldwide since the late nineteenth century because of its insulating properties. The term “asbestos” refers to several commercial forms, which are classified into two main groups; 1) serpentine (with curly fibers), also known as chrysotile or “white asbestos”; and 2) amphiboles (with straight fibers), which includes crocidolite (“brown asbestos” or riebeckite), amosite (“blue asbestos” or cummingtonite-grunerite), tremolite asbestos, actinolite asbestos, and anthophyllite asbestos. Chrysotile asbestos has been and is the form most extensively mined and used (over 90% of the world production in the past, 99% nowadays) (Stayner et al., 2013).

Exposure to asbestos may cause asbestosis, a chronic fibrotic disease of the lung which ultimately leads to respiratory failure, and several pleural lesions, including effusions and plaques. Moreover, all forms of asbestos are recognized to possess carcinogenic properties, although with different potency (crocidolite being worse than amosite and amosite being worse than chrysotile). Asbestos exposure is associated with an increased risk of mesothelioma and lung, laryngeal, and ovarian cancer, while evidence regarding the association with other cancer sites (pharynx, stomach, colon, and rectum) is considered still limited (IARC, 2012). There is a “pandemic” of asbestos-related diseases worldwide, with It has been estimated that 107,000 people die from malignant mesothelioma (MM), lung cancer, or asbestosis every year (Stayner et al., 2013).

Among the asbestos-related cancers, MM has the peculiarity of being practically induced only by asbestos (or other asbestiform fibers like erionite and fluoro-edenite). MM may affect the four mesothelial tissues: pleura (more than 90% of cases), peritoneum (<10%), and very rarely the pericardium and the tunica vaginalis testis. Hence, MM and pleural cancer incidence and mortality have been largely used to monitor the health impact of asbestos exposure worldwide.

The largest burden of MM incidence and mortality is in countries that began using asbestos many decades ago (in Western Europe, North America, and Oceania). Although many of them have banned asbestos production, import, and use (http://ibasecretariat.org/alpha_ban_list.php), peak MM frequency has not been reported yet because of the long time lapse (“latency”) between exposure and MM occurrence. In newly industrializing countries that are (and in some cases increasingly are) using asbestos (in Asia, Eastern Europe, and South America), MM incidence is relatively low. However, for a number of reasons, several researchers and scientific organizations, including the World Health Organization (WHO), the International Commission on Occupational Health (ICOH), the International Labour Office, and the Joint Policy Committee of the Societies of Epidemiology, have called for a global ban on asbestos mining, use, and export (ICOH, 2014; Sim, 2013; Terracini, 2006). These reasons include: 1) In many industrializing countries current MM statistics are seriously affected by lack of mortality or incidence data, underreporting, and miscoding (Delgermaa et al., 2011; Park et al., 2011); 2) Due to the long latency, MM occurrence is expected to increase in the coming decades, paralleling asbestos use; 3) Asbestos exposure does harm not only workers, but also their families and people living near asbestos plants or exposed to degraded asbestos-containing products, notably, asbestos-cement roofs (Sim, 2013; Mensi et al., 2015); and 4) The impact of asbestos on lung cancer occurrence, although very difficult to evaluate, is even greater than on MM frequency (McCormack et al., 2012).

Brazil banned the use of amphiboles in 1991, but is still continuing to produce and use chrysotile asbestos (Stayner et al., 2013). Only a few States banned chrysotile, including São Paulo, Rio de Janeiro, Minas Gerais, Rio Grande do Sul, Pernambuco, Mato Grosso, and Mato Grosso do Sul. However, because of the conflicts between States and Federal Governments, the law in Mato Grosso do Sul has been deemed unconstitutional, and some companies in the other States were allowed to continue to use asbestos (<http://thebrazilbusiness.com/article/asbestos-regulation-in-brazil>). Curitiba, the Capital of the State of Paraná, is going to ban chrysotile on December 11th, 2015, in force of a law approved on November 7th, 2012 (<http://www.mppr.mp.br/modules/noticias/article.php?storyid=2970>). The only asbestos mine in Brazil is located in the municipality of Minaçu, in the state of Goiás.

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Currently, MM incidence in Brazil is lower compared with other countries, like Italy, that have been using asbestos extensively for a long period (IARC, 2014). However, MM statistics in Brazil are affected by miscoding of MM deaths and cases (Pasetto et al., 2014). In any case, MM incidence and mortality are expected to increase in the forthcoming years in Brazil (Algranti et al., 2015). Up to now, only a few studies evaluated the impact of asbestos on the health of Brazilians. There is an urgent need for more work in this area. For this reason, the UFPR, Escola de Enfermagem, launched a project on asbestos and MM in collaboration with the Secretária of Saúde of Curitiba and with the Fondazione IRCCS Ca' Granda Ospedale Maggiore Policlinico, one of the major hospitals in Milan, Italy. In the period 2015-2017 two Italian Epidemiologists (MC and DC), who work in a Mesothelioma Registry in the Lombardy, the largest (10 million people) and most industrialized Italian Region, will collaborate with researchers and health professionals in Curitiba in a project funded by CAPES Foundation (Coordination for the Improvement of Higher Education Personnel) in Brasília. The project foresees two main areas of research: 1) A cohort mortality study among workers employed in three asbestos-cement factories located in or near Curitiba; and 2) the implementation of a registry of MM cases in metropolitan Curitiba (and possibly in the whole Paraná), in collaboration with the Curitiba Cancer Registry and the main hospitals in Curitiba. We hope this work will help to increase awareness of health effects of asbestos in Brazil, where the perception of the magnitude of health effects attributable to asbestos is probably still poor.