Turkey Asbestos Control Strategic Plan Final Report

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Turkish Thoracic Journal started its publication life following the mergence of two separate journals which are published under the titles “Turkish Respiratory Journal” and “Toraks Journal” until 2007. Archives of both journals were passed on to the Turkish Thoracic Journal.

The aim of Turkish Thoracic Journal is to publish pulmonary disease-related clinical, experimental and epidemiologic studies that are scientifically highly qualified. Additionally, reviews, editorials, letters to the editor, and case reports are also accepted. Reports presented in meetings organized by the Turkish Thoracic Society Head Office or national and international consensus reports are published as supplements. The journal is published 4 times annually, in January, April, July and October. The target groups are chest diseases physicians, thoracic surgeons, internal medicine doctors and practitioners interested in pulmonary diseases.

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Turkey Asbestos Control Strategic Plan was prepared for the detection and prevention of one of the most important public health problems of our country by excitement, enthusiasm, and effort of many academic members and scientists, friends of mine. I extend my gratitude and appreciation to my dear friends and colleagues who are members of the Turkey Mesothelioma Study Group and to the Turkish Thoracic Society and the Turkish Respiratory Society for their strong support in preparation, implementation, and interpretation stages during the studies. I thank the Chairman of the Public Health Institution of Turkey, the Director of Cancer Control Department, the Head of Environmental Health Department, and their laboring staff for their financial and administrative support with an understanding and effective cooperation and for their great contribution to make the planning studies happen with the efforts of technical staff in 62 cities during the planning studies. I sincerely thank the authorities of TUBITAK Marmara Research Center Materials Institute, particularly to Dear Esin Günay, who meticulously performed analysis of mineral samples, unconditionally fulfilled our additional requests, and provided model cooperation and Dear Rector of Eskişehir Osmangazi University who always provided financial, administrative, and moral support to planning studies. I believe that this important problem will be solved as soon as possible when solutions according to the obtained results are rapidly implemented in real life in related regions. Dear Arzu Yorgancıoğlu who is the President of Turkish Thoracic Society, Dear Members of Executive Committee of Turkish Thoracic Society, and Dear Editors of Turkish Thoracic Journal will have a great part in this solution by publishing the plan result report as an additional issue.

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CONTROL STRATEGIC
PLAN
FINAL REPORT

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EXECUTIVE SUMMARY OF THE PLAN

INTRODUCTION AND OBJECTIVE: Asbestos exposure is a significant health problem in Turkey. However, in Turkey, different from the developed countries, asbestos exposure is often observed in the rural areas, and the asbestos-related diseases are more frequent among rural people. The frequency of the mesothelioma, lung cancer, and benign pathologies of the lung and pleura in the population exposed to asbestos in the rural areas is as high as for the people directly exposed to the asbestos in the industry. On the other hand, because there are insufficient records in Turkey with respect to the occupational environment, it is not fully possible to determine the occupational asbestos exposure.

The Turkey Asbestos Control Strategic Plan has been prepared and implemented to detect the incidence and importance of asbestos exposure in the rural areas, which is a serious public health problem and a major reason for the asbestos-related diseases in Turkey. The objective of the Plan is to supply data for the studies aimed at detecting and preventing occupational asbestos exposure and developing a rehabilitation program aimed at avoiding this exposure.

Other objectives of the Plan are to detect the current and future mesothelioma risks for the whole of Turkey, to guide the studies for the elimination of asbestos in the rural areas by the end of 2015, to develop an action plan which will ensure that measures are taken to determine workplaces exposed to asbestos and to remove the use of asbestos by the end of 2015, and to provide the early diagnosis and efficient treatment of the cases detected by the follow-up of the group under risk.

The Turkey Asbestos Control Strategic Plan was prepared and performed by the Turkish Mesothelioma Working Group and the Public Health Institute of Turkey. Thirty-eight faculty members, including 19 professors, 16 associate professors, three assistant professors, two specialist physicians of the Turkish Mesothelioma Working Group, two mineralogist professors, and four foreign consultant scientists, took part in the Turkey Asbestos Control Strategic Plan.

METHOD: In this study, “from case to the field method” has been used. In other words, birth and living places of the cases with mesothelioma diagnosed between 2008 and 2012 to detect regions/villages exposed to asbestos in Turkey were determined; villages under the risk of being exposed to asbestos were identified. Soil samples were collected from these villages; these samples were analyzed for minerals and finally the locations exposed to asbestos were determined.

In hospitals of 30 provinces where mesothelioma cases are determined to be diagnosed mostly, the patients diagnosed with “mesothelioma” under the code of C45 between 2008 and 2012 were identified based on their names, ages, genders, diagnosis dates, birth places, villages, districts, provinces, provinces where they were diagnosed, and addresses based on the hospital records. The cases were checked one by one according to their identity, name, age, birth place, and register and address information with their identification numbers from the Central Registry of Oncology. The cases were identified based on the health dates and ages were determined and these were verified by their registers. Following the identification of all deceased cases, the mean and median survivals were identified according to their diagnosis dates.

After obtaining the final records of the cases with mesothelioma, the cases born in villages/rural areas were determined; the villages where these cases were born were identified as “villages required to be examined for asbestos exposure risk.” “Villages required to be examined for asbestos exposure risk” were classified according to provinces. The list of provinces was sent to the provincial coordinating researchers and to the provincial directorates of public health. The provincial coordinating researchers and the officials from the provincial directorates of public health combined the local and central information and initiated the work to determine the villages to be visited and collect samples. Therefore, training programs, creating awareness, and survey work were conducted in the provinces. Following the identification of the “villages required to be examined for asbestos exposure risk” on the provincial basis through local surveys, the officials of the provincial directorate of public health went to these villages to collect samples.

The teams of the provincial directorate of public health collected samples from the soil deposits, the walls of the houses, roofs, and other areas under the risk of asbestos exposure with the help of the mukhtar and the villagers. These samples were sent to the Eskişehir Osmangazi University for the classification and the first examination. The soil samples were coded according to their provinces, districts, villages, areas, and individual houses. Those found to have fibrous minerals were regarded as risky soil samples and were sent to the TUBITAK Marmara Research Centre Material Institute for mineral analysis with an x-ray diffractometer (XRD) by shipping.

The existence of the asbestos in the samples was examined in the TUBITAK Marmara Research Centre Material Institute based on the sub-types of asbestos. The samples found to contain asbestos and fibre mixture were listed in codes and were reported, including the formulation of asbestos and fibre type.

Following the evaluation of the mineral analysis results, the coded soil samples were classified based on the provinces, districts, villages, areas, and names of the owners of the houses. Thus, the villages, areas, and houses with asbestos exposure were identified.

The populations of the villages with asbestos exposure for 2012-2013 were determined based on the names of villages, districts, and provinces on the official websites www.yerelnet.org.tr and www.nufusu.com, including the data of the Turkish Statistical Institute (TÜİK).

Finally, the “population exposed to asbestos in rural areas for a risky period of time,” some of which comprise of mesothelioma cases, was determined. The number of mesothelioma, lung cancer, and benign lung and pleura diseases to develop in both populations for the next 20 years was estimated.

RESULTS: During the study, the demographic information of 5,617 mesothelioma cases out of 7,789 cases with the C45 code, whose data is reliable based on certain analyses, was collected from 2008 to 2012 in Turkey. Out of these cases, 3,718 were born/living in the village. It was found out that 3,495 of these mesothelioma cases died by July 2014. The median survival of the dead cases was found to be 8 months.

Following the analysis of the cases born and living in rural areas, 1,236 villages in 58 provinces were determined as “villages required to be examined for asbestos exposure risk.” Trained officials from the provincial directorates of public health visited 1,018 villages and collected 2,447 samples from the walls of houses, roofs, and soil deposits around the villages. It was found that 218 villages were not visited because the statements of the mukhtars and minutes were taken. However, these villages should also be visited because two or more mesothelioma cases were observed in 120 of these villages.

The soil samples (n=2,447) were sent to the Eskişehir Osmangazi University. Of these samples, 1,251 were subjected to mineral analysis at the TUBITAK Marmara Research Centre Material Institute with an XRD. As a result, 379 samples were found to contain fibres. According to the registers for the period of 2012 and 2013, 158,068 people lived in these rural areas/villages. Apart from the settlements with a population of more than 1,000 people, the number of those people living in these areas is 98,453. These populations include the cases with asbestos exposure and who would continue to be exposed to asbestos if no preventive measure is taken. Moreover, the population exposed to asbestos for a risky period of time in terms of related diseases that may lead to 3,718 mesothelioma cases was estimated to be 571,460. Thus, the population exposed to asbestos for a risky period of time and the one who continues to be exposed to asbestos in rural areas was estimated and identified.

It was projected that 15,450 mesothelioma, 5,737 lung cancer, 82,290 pleural plaque, 59,431 diffuse pleural fibrosis, and 2,286 asbestosis cases will emerge in the population exposed to asbestos for a risky period of time in the abovementioned rural areas. Moreover, it was projected that 2,511 mesothelioma, 1,322 lung cancer, 17,344 pleural plaque, 12,526 diffuse pleural fibrosis, and 482 asbestosis cases will emerge in the population who continues to be exposed to asbestos between 2013 and 2033.

OCCUPATIONAL ASBESTOS EXPOSURE: In the Plan, 1,879 cases who were diagnosed with mesothelioma between 2008 and 2012 but were not born and/or living in the village are among the patients with mesothelioma who are under a heavy risk of occupational exposure. These cases should be examined based on occupation and workplace, and in line with the obtained data, the existence of the occupational asbestos exposure should be analyzed.

KEYWORDS: Asbestos exposure, mesothelioma, environmental exposure, public health