

IZMEROV / ABSTRACT

CHRYSOTILE. RUSSIAN EXPERIENCE IN OCCUPATIONAL HEALTH

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The issue of banning chrysotile or restricting it in international trade has been repeatedly raised by both national and international organisations although scientific evidence of impossibility of its safe and responsible use has never been provided.

Moreover, the question about banning chrysotile is usually raised by the countries where pure chrysotile free of more hazardous and justly prohibited amphibole asbestos fibres has never been used.

Russia is the largest asbestos producer and consumer in the world. In Russia only chrysotile is produced and used. Now 11 deposits of chrysotile are prospected with balance reserve of about 111 mln. tons. Two big enterprises are working on mining and milling of chrysotile ore: «Uralasbest» and «Orenburgasbest».

Chrysotile containing materials allowed for use in the Russian Federation according to: 2.1.2/2.2.1.1009–00 State Standard "List of asbestos-cement products recommended for use"; Letter no. 1100/3232-1-110 of Chief Hygienist of the Russian Federation from 9.11.2001 "Asbestos products recommended for production and use at transport, equipment, industrial and common life commodities". Safety measures in use of these materials are determined by 2.2.3.757 – 99 State Sanitary Regulations "Use of asbestos and asbestos-containing materials". On April 8, 2000 ILO Convention 162 was ratified in Russia by Federal Act 50-FZ "About the ratification of Convention on Safety in the use of asbestos from 1986".

The problem of asbestos influence on human health in Russia is studying at two scientific research centers – Ekaterinbourg medical center is carrying out research works on the problem (based on «Uralasbest» company) from the day it was founded. Our Institute marked the priority of asbestos problem 40 years ago, since the time we've become interested in situation at Moscow asbestos technical wares plant.

According to our studies all detected in Russia cases of asbestosis and lung cancer are the result of long-lasting professional contact in conditions of extremely high levels of asbestos containing dust concentration.

During last decades dustiness levels were considerably reduced due to many reasons: strengthening of regulations concerning environment protection and implement of severe economic measures; implement of sufficient financial compensation, which industrial authorities must pay for every case of asbestos-related occupational disease; development and implementation of different hygienic and technological measures for reduction of dust excretion to environment and working zone air.

Distinctive features of occupational chrysotile-induced diseases have been established: asbestosis has a long asymptomatic period, slow progression; uncomplicated forms of asbestosis have no acute onset, exudation, including bloody pleural effusion, and other manifestations characteristic of health effects of amphiboles; chronic bronchitis develops gradually, has no acute onset with fever and symptoms of intoxication; over 50 % of cases with asbestos-induced diseases are associated with different congenital malformations and anomalies of bronchi and lungs; biomarkers of susceptibility and resistance to the asbestos-induced diseases and malignant neoplasms have been found recently. Our research work allowed us to bring out a «dose-effect» relationship, to ground «critical» value of dust load in total mass of inhaled dust, which is equal to 100 grams of total dust during all the period of contact.

Our data were confirmed by results of Russian-Finnish-American research project “Health and exposure surveillance of Siberian asbestos miners”. Development of dust-related (and asbestos-related in particular) changes in health status was found only among workers of old asbestos enrichment factories closed now, where dust levels exceeded current thresholds several hundred times. Cardiovascular, endocrine diseases, pathology of upper airways, etc, complicated all cases of asbestosis and occupational chronic bronchitis in our study.

It should be recognized, that possibility of development dust-related (and asbestos-related in particular) changes in health status of workers is the result of influence of complex of occupational and non occupational risk factors. Most important among them we consider total inhaled dust dose, changes in functional status of respiratory tract, chronic pathology of organs and systems, which can exert influence on it. Among the general risk factors of asbestos related diseases the most significant also are tobacco smoking, chronic bacterial infection, traumatic injuries of organs, genetic predisposition, etc.

The theoretical and practical methods of dust control developed at present time allow controlling health and exposure and introducing effective prevention aimed at reduction of respiratory pathologies of workers in conditions of controlled asbestos use. Political and economic interests should not discredit this principle.

In “Judgment on the problem of total ban of asbestos by the Russian group of governmental experts” (2002); Decree of the Government of the Russian Federation, No. 869 of July

31, 1998, Regarding the Use of Chrysotile Asbestos; recent letter to WHO Director-General by Minister of Public Health and Social Development of the Russian Federation Russia proposes to form a group of international experts for the analysis of scientific data obtained in different parts of the world.

Russian researchers represent the greatest producer of chrysotile asbestos and are ready to present scientific data on the matter. They support intention to create an international program for regarding all the arguable questions evoked in control use of chrysotile.