MEDICAL GEOLOGY PROBLEMS IN TURKEY

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Abstract: Turkey seems to be confronted with some medical geological problems due to having various petrological and lithological varieties. The most commonest problems consist of Mesothelioma which are also known to be pleura and peritoneum cancer, and dental and skeletal Fluorosis and Keretosis. This kind of diseases in Turkey, as well as in the world, were determined in certain places made up of acidic rocks (granite, syenite, granodiorite, rhyolite, trachyte, andesite, pegmatites, etc.) and ultrabasic-basic rocks (serpentinite, dunite, harzburgite, gabbro, etc.). These types of locations are also known to be associated with some natural resources such as metallic (copper, lead, zinc, gold, iron, chromium, etc.) and non-metallic occurrences (zeolites, boron, trona, feldspar, etc.) which are usually operated with respect to mining. Accordingly, these areas are human’s natural living areas. Mesothelioma seems to be resulted from fibrous erionite and asbestos minerals. The most important places related to Mesothelioma formed by erionite minerals are the Karain, Tuzköy, and Sarıhdrı villages, Nevşehir, in the Central Anatolia Region of Turkey. Bu köylerde bazı ailelerde plevral ve peritoneal Mesothelioma ile birlikte lenfoma, karaciğer kanseri ve kemik tümörleri de tanılanmıştır ve tüm vakalar için temel faktör Eriyonit olarak ortaya konmuştur. In addition to pleural and peritoneal Mesothelioma, the lymphoma, liver cancer and bone tumors have also been determined in some families in these locations. The fibrous erionite minerals have been described as the major reason for all of these cancer diseases in all these villages in the Nevşehir region in central Anatolia, Turkey. Although these villagers migrated to other places, they keep being affected from the erionite because the agricultural areas are located in the volcanic tuff containing erionite.) Ülkemizde asbeste bağlı çeşitli ağız ve solunum yolu hastalıklarını tanımlamış bazı iller ise Diyarbakır, Eskişehir, Denizli, Kütahya, Muğla, Hatay, Burdur, Sivas, Kahramanmaraş, Elazığ ve Şanlurfa’da. There are some other cities in Turkey where the asbestos related lung and respiratory tract cancer diseases are seen that they are Denizli, Kütahya, Muğla, Burdur (west Anatolia), Eskişehir and Sivas (central Anatolia), Elazığ, Diyarbakır, Kahramanmaraş, and Şanlurfa (east and southeast Anatolia). The basic and ultrabasic rocks are exposed in vast areas in all these regions in Turkey. One of the most important healty problems of Turkey is the dental and skeletal fluorosis disease which results from excess fluorine in water supplies and meadow soils. This disease which makes people and animals (especially sheep, cows and donkey) unable to use their teeth, joints and organs like arm and leg is seen in Turkey in the following places: Kızılcaören(Eskişehir), Doğubeyazıt and Çalıran(Ağrı), Muradiye (Van) and Güllüköy (Uşak). Some Fluorosis incidents have also been traced in Isparta, Konya, Aydın, Elazığ, Muğla and Samsun regions. One of the important problem of Turkey in terms of medical geology is the keratosis disease which is resulted from the excess arsenic (As) in water supplies. The main place for this disease is the Kütahya city in west Anatolia, Turkey. However, the As limit in underground and surface waters is exceeded 10 µg/liter in some cities such as Kayseri, Nevşehir, Ağrı, Tokat and İzmir. Another major problem arising from the lithological characteristics of the natural environment is the high amount of natural radioactivity level which is depended mainly on the acidic magmatic rocks in Turkey. Although the vast majority of the surface of Turkey is covered with the acidic rocks, only the limited areas were studied with respect to natural radioactivity level, which showed that it is higher in some localities than the recommended value by IAEA.

Key words: Mesothelioma, dental and skeletal fluorosis, keratosis, erionite, asbestosis