ASBESTOS RESOURCE CENTER

Mesothelioma

Mesothelioma Treatment: Radiation

Radiation therapy (radiotherapy, brachytherapy, implant radiation, or interstitial radiation therapy) involves use of high-dose radiation on malignant tumors. High-energy x-rays, neutrons, photons, cobalt or other radiation sources are used to destroy cancer cells and shrink tumors. The radiation may come from a machine (external-beam radiation therapy) or from materials (radioisotopes) that produce radiation. These materials are sealed into thin plastic tubes, needles, wires, or catheters and placed near to or into the tumor (internal radiation therapy). The radiation injures the cancer cells so they can no longer continue to divide or multiply. This results in a reduction in size of the affected tumor. The complete tumor and malignancy that has spread to nearby tissues however is very resistant to treatment. Therefore radiology is usually not used in isolation but is used as one of several other therapies, such as surgery and chemotherapy, in a carefully customized treatment plan.

Radiation is useful because mesothelioma is made up of rapid growing cells and radiation is most effective on cells that divide rapidly. A series of treatments is included in the course of treatment. With each treatment more cells die or are injured and therefore the tumor shrinks. Radiation therapy is a useful palliative (symptom relief) treatment. Relief of symptoms such as pain and shortness of breath is achieved. Unfortunately not all the diseased cells can be removed without serious effects on the patient's body. The remaining cells continue to divide and multiply.

Radiation therapy affects only the area being treated, but it is not selective in its affects. Healthy cells as well as tumor cells in the treated area may be affected by this treatment. Most of the healthy cells injured begin to repair themselves hours after exposure and can recover from this treatment. However, the damage to the healthy cells is the reason for the side effects of radiation therapy. The side effects that occur during radiation therapy are manageable and should be openly discussed with the doctors and nurses providing care.

The size, type, location, and grade of tumor determine which, how much and how often radiation will be given. Complex calculations are used to determine the dose and timing of radiation in treatment planning. Often, the treatment is given from several different angles in order to deliver the maximum amount of radiation to the tumor and the minimum amount to normal tissues. The radiation used in the treatments is not retained in the body. It, along with dead tumor cells, is removed from the body during the natural cleansing action of the blood and is excreted from the body. Radiation therapy can be limited as a choice of treatment by the size of the tumor and its proximity is to vital organs.