

Study Shows Bone Drugs May Prevent Radiation Exposure

Researchers said two compounds in a class of drugs called bisphosphonates delayed and in some cases prevented mice exposed to high doses of radiation from developing leukemia, a common long-term side effect of radiation exposure.

Alexandra Miller, a scientist at the Armed Forces Radiobiology Research Institute in Bethesda, Maryland, has been studying ways to protect military personnel and astronauts from radiation exposure.

But she said the findings, which she presented at the American Association for Cancer Research in Denver, Colorado, could also help cancer patients treated with radiation who later develop leukemia as a side effect of their treatment.

The compounds Miller studied are bisphosphonates known as ethane-1-hydroxy-1, 1-bisphosphonate or EHBP, which Miller said is chemically similar to Procter & Gamble's osteoporosis drug Didronel or etidronate.

The other was an experimental drug called CAPBP, which Miller said is similar to Roche's Boniva or ibandronate.

She picked the drugs because of studies in humans that suggest bisphosphonates may help prevent cancer from spreading to the bone. They also have been shown to remove uranium from the body.

Miller exposed lab mice to radiation strong enough to cause leukemia. She injected some of the mice with one of the two compounds and waited.

Typically, mice exposed to radiation developed leukemia and died 92 to 110 days later.

"With the drug, the animals were developing leukemia too, but it took much longer, 150 to 170 days," Miller said in a telephone interview.

"The total number that actually developed leukemia was significantly lower with both of the drugs," she said.

She said all of the untreated animals developed leukemia after radiation exposure, but only about half did in the treated group.

"It was very significant. We didn't have any toxic effects with the drug treatment," she said.

Miller said many more studies would be needed before the drugs could be used in humans, but she thinks the compounds show promise as a way of addressing one of the most toxic side effects of radiation exposure. (source: reuters)

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