

NEWS BRIEFS

No Increased Leukemia at Canadian Nuclear Sites

Children living near nuclear facilities face no measurably greater risk of leukemia than the general population, according to the conclusions of a Canadian epidemiological study focusing on five sites in Ontario. Published by the Atomic Energy Control Board of Canada (AECB) in June, the study is the second phase of an effort that has so far failed to substantiate fears that the industry may heighten the incidence of childhood leukemia.

AECB funded the study after surveys in the United Kingdom noted increases in leukemia mortality among children living around certain facilities, most notably a ninefold increase around the Sellafield nuclear reprocessing plant near the village of Seascale in north-western England.

The Canadian scientists examined records for children up to age 14, identifying leukemia deaths between 1950 and 1987, and cases diagnosed between 1964 and 1986.

All of the children lived near nuclear plants operating in Ontario, including uranium mines, refining facilities, nuclear power plants, and the nuclear research laboratories at Chalk River—the source of molybdenum-99 used in nuclear medicine in the U.S. and Canada.

The researchers compared observed to expected cases of leukemia for two sets of populations for each facility: those within 25 km of the facility, and those within the same county.

Rates of occurrence of leukemia varied slightly both above and below the average level in Ontario. The number of observed cases was too small, the researchers said, to provide statistically significant evidence that the differences in leukemia rates were due to anything but chance variations in the occurrence of the disease, although the numbers “indicate the need for further investigation.” The study was large enough, however, to detect excess risks of the magnitude reported at Sellafield, had they existed

in Ontario.

The study is available from the AECB Office of Public Information at P.O. Box 1046, Ottawa, Ontario, K1P 5S9, (phone: 613/995-5895). ■

Strategic Task Force Leader Chosen

Barbara Y. Croft, PhD, will chair The Society of Nuclear Medicine's strategic planning task force assigned by SNM President Leon S. Malmud, MD, to plot a course for the society in response to accelerating changes within and beyond medical practice.

The task force will try, with the help of leadership and interested members, to set goals for the Society to reach in five years. Once goals are identified, the challenge will be to determine ways to reorganize the society to obtain these goals, says Dr. Croft, a past-president of SNM and associate professor of radiology at the University of Virginia, Charlottesville.

The task force plans to hire an outside

consultant to oversee the process at an estimated cost of \$15,000. At this writing, hiring was expected before a meeting of the task force slated for September 8. Dr. Croft hopes to complete a strategic plan in time for the next SNM Annual Meeting in June 1992.

Issues identified by Dr. Croft include the proliferation of committees, the format of the Annual Meeting, the increasing importance of government relations, the location of SNM headquarters, and the alarming number of unfilled nuclear medicine residencies, to name a few. Dr. Croft stresses the importance of at least considering changes.

“You get renewed vigor putting everything up for grabs,” she says. “The Society has been tending to business as usual while the world changes around it.” For example, she says, Society membership growth has slackened over the years while the importance of nuclear medicine has surged. As a result, she says, “The educational opportunities of the Society are not reaching many of the people performing nuclear medicine.” ■

E&R FOUNDATION STUDENT FELLOWSHIPS FOR 1991

The Education and Research Foundation of The Society of Nuclear Medicine awarded eleven student fellowships in the amount of \$3,000 to the following medical and pharmacy students:

Kevin L. Berger

University of Michigan Medical Center, Ann Arbor

Brian P. Brooks

University of Pennsylvania School of Medicine, Philadelphia

Tomasz D. Gutowski

Wayne State University School of Medicine, Detroit, Michigan

James B. Jones, Pharm.D.

University of Pennsylvania School of Medicine, Philadelphia

Teresa M. Jones-Wilson,

Washington University Medical Center, St. Louis, Missouri

Mangesh H. Kanvinde

University of Oklahoma, College of Pharmacy, Oklahoma City

Lori Jo Kiewel

University of New Mexico, College of Pharmacy, Albuquerque

Judeth K. McGann

Albany Medical College, Albany, New York

Shawn T. Patrick

Medical College of Wisconsin, Wauwatosa

Erik K. Rios

Cornell University Medical College, New York, New York

Diana J. Tribbey

Purdue University, School of Pharmacy, West Lafayette, Indiana

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Swedish Epidemiological Study Affirms Safety of Iodine-131 Therapy

Doctors have administered "atomic cocktails" of radioactive iodine-131 since the 1940s to successfully treat thousands of people suffering from hyperthyroidism, —including President George Bush and his wife Barbara— but studies have not completely freed the use of the isotope from concerns of heightened cancer risk. Important, if not surprising, new evidence for the safety of ^{131}I therapy comes from a long-term Swedish study that found that overall cancer risk did not increase with administered dose or with time in 10,550 hyperthyroid patients treated with ^{131}I .

The Swedish survey supports current estimates of the acceptable levels of risk from radioiodine therapy, according to David Becker, MD, director of nuclear medicine at New York Hospital/Cornell Medical Center in New York City. "I think it's very reassuring," says Dr. Becker, an investigator in a similar study conducted earlier in the U.S.

"If I had hyperthyroidism, I wouldn't think twice about drinking that cocktail," says co-author John D. Boice, Jr., chief of radiation epidemiology at the National Cancer Institute in Bethesda, Maryland.

"If anything, risks at low doses might be lower than predicted from high-dose studies," the researchers, led by Lars-Erik Holm, MD, of Karolinska Hospital in Stockholm, wrote in the August 8 *Journal of the National Cancer Institute*.

The study's results may also prove reassuring for many of the people exposed to the radioiodine component of fallout from the Chernobyl reactor accident, according to Bertrand Brill, MD, PhD, an investigator in similar U.S. studies and director of research in the department of nuclear medicine at the University of Massachusetts Medical Center in Worcester. Radiation doses from ^{131}I in the study exceed by many times the radiation doses from ^{131}I in fallout from

the Chernobyl accident.

The Swedish survey followed patients for an average of 15 years after they received ^{131}I to treat Graves' disease or toxic nodular goiter.

After comparing observed incidence of various cancers to expected incidence, risk for all cancers combined among patients treated for Graves' disease proved no higher than in the general population. Patients treated for toxic nodular goiter, however, showed an all-cancer risk slightly higher than normal. The average radioactivity given to the goiter patients was 700 MBq compared to 360 MBq to patients with Graves' disease.

Levels of lymphoma and leukemia—the most readily observed radiation effect—were lower than expected among both hyperthyroid groups. But cancer of the stomach, kidney, and brain occurred significantly more often than expected in the toxic nodular goiter group.

Increasing absorbed doses did not correlate with increased risks, nor did risks rise with time. Cancer of the stomach was the only exception. Among the toxic nodular goiter patients, the number of stomach cancers increased with time and with higher doses, although the dose response relationship was not statistically significant.

Only for stomach cancer do the authors conclude that radiation might, in part, induce an excess risk. The stomach received the greatest irradiation (estimated dose: 0.25 Gy) of the organs other than the thyroid itself (estimated dose: 60-100 Gy). There was, however, no increased risk for cancer of the bladder, which received doses of 0.14 Gy. The authors say the stomach cancer findings merit further study.

The negative leukemia results suggest that doses of radiation delivered gradually, as in the case of ^{131}I therapy, are less carcinogenic than comparable doses delivered all at once, according to the authors, perhaps, they speculate, because protracted doses give the cellular machinery more time to repair radiation

damage than is possible with acute doses. ■

Fallout in Firewood

Ash from ordinary firewood is the unlikely source of environmental radiation far greater than routine emissions from nuclear power plants, according to research presented at the annual meeting of the Health Physics Society. Samples of wood ash tested around the country contained surprisingly high levels of radioactive cesium and strontium.

Stewart A. Farber, MPH, manager of environmental monitoring at the Yankee Atomic Electric Co. in Bolton, Massachusetts, knew that tree leaves filter sub-micron sized airborne particles and he wondered if trees retained fallout from the large-scale atmospheric nuclear weapons testing conducted prior to 1963. While cleaning his fireplace two years ago he decided to test some of the ash.

To his surprise, says Mr. Farber, the radioactivity from cesium and strontium isotopes in the ash was 100 times greater than any environmental sample ever analyzed in his lab, which conducts environmental monitoring at six nuclear power plants in New England.

Subsequent testing of wood ash from 14 states across the country revealed some radiation levels greater than 20,000 picocuries per kilogram from cesium-137 and strontium-90. That's about 100 times greater than levels in the septic sludge from nuclear power plants, Mr. Farber notes, which costs utilities about \$100 per cubic foot to dispose of. If regulators treated wood ash the same as low-level radioactive waste from hospitals, and power plants, he says, wood burners would have to spend more than \$30 billion each year to get rid of ash.

Many companies mix wood ash with manure to make fertilizer. Mr. Farber doubts that food grown with such products poses a hazard, but says studies are needed to measure plant uptake of cesium and strontium from soil. ■