

NEWSBRIEFS

NRC ACMUI to Meet in October

The Advisory Committee on the Medical Uses of Isotopes (ACMUI) is scheduled to meet at the Nuclear Regulatory Commission (NRC) headquarters in Rockville, MD, on October 13 and 14. The meeting's public session will run from 10 AM to 5 PM on October 13 and from 8 AM to 5 PM on October 14. Agenda items for discussion in the public sessions include the use of ^{125}I brachytherapy seeds as markers, proposed changes to abnormal occurrence criteria, discussion of medical event criteria, and an update on the St. Joseph's Mercy Hospital dose reconstruction case. A complete agenda is posted at www.nrc.gov/reading-rm/doc-collections/acmui/schedules/2004/. Questions from the public will be permitted during the open sessions at the discretion of the committee chairman. Transcripts of the meeting and written comments will be available about January 14, 2005, on the NRC reading room Web site and in the NRC Public Document Room in Rockville.

Nuclear Regulatory Commission

^{18}F -FDG Injection Approved

On August 5, 2004, the Food and Drug Administration (FDA) approved a new drug application (NDA) for ^{18}F -FDG submitted by Weill Medical College of Cornell University and Citigroup Biomedical Imaging Center (New York, NY). The NDA was approved according to the streamlined procedures outlined in a March 2000 guidance on the approval of PET drugs. The Weill Medical College application was approved in less than 6 months. Although approved applications are not yet required for PET drugs, FDA "encourages PET centers to submit applications for approval and is committed to working closely with applicants during the drug approval process." On March

10, 2000, FDA announced ^{18}F -FDG to be safe and effective for certain indications when produced under conditions specified in approved applications (see *Fed Reg.* 2000;65:12999–13010). In accordance with the FDA Modernization Act of 1997, a draft guidance was issued for industry entitled *PET Drug Applications—Content and Format for NDAs and ANDAs* (www.fda.gov/cder/regulatory/pet). This guidance outlined a simplified process that PET producers can use to demonstrate that their drug meets quality standards.

U.S. Food and Drug Administration

FDA Approves Drugs to Treat Internal Contamination from Radioactive Elements

The Food and Drug Administration (FDA) announced on August 11 the approval of two drugs, pentetate calcium trisodium injection (Ca-DTPA) and pentetate zinc trisodium injection (Zn-DTPA) for treating radiation contamination involving plutonium, americium, or curium. The 2 drugs have been used for several decades as investigational drugs to treat patients in radiation contamination emergencies. The FDA noted in the announcement that Ca-DTPA and Zn-DTPA should not be administered simultaneously. If both products are available, Ca-DTPA should be given as the first dose. If additional treatment is needed, treatment should be switched to Zn-DTPA. This treatment sequence is recommended because Ca-DTPA is more effective than Zn-DTPA during the first 24 hours after internal contamination. After the initial 24 hours, Zn-DTPA and Ca-DTPA are similarly effective. Ca-DTPA and Zn-DTPA are usually administered into the bloodstream; however, in individuals whose contamination is only by inhalation, Ca-

DTPA or Zn-DTPA can be administered by nebulized inhalation.

U.S. Food and Drug Administration

NRC Issues New Strategic Plan

On August 11 the Nuclear Regulatory Commission (NRC) issued its strategic plan for fiscal years 2004–2009. The plan includes 5 goals. These were outlined in a press release as: safety: ensure protection of public health and safety and the environment; security: ensure the secure use and management of radioactive materials; openness: ensure openness in the regulatory process; effectiveness: ensure that NRC actions are effective, efficient, realistic, and timely; and management: ensure excellence in agency management to carry out the NRC strategic objective. The plan includes strategies for the management of human capital, infrastructure, finance, electronic government, budget and performance integration, and internal communications. The strategic plan (NUREG-1614, Volume 3) is available on the NRC Web site at www.nrc.gov in the lower right-hand corner of the home page.

Nuclear Regulatory Commission

NHGRI Launches Centers for Excellence in Ethical, Legal and Social Implications Research

The National Human Genome Research Institute (NHGRI), part of the National Institutes of Health (NIH), announced on August 31 the funding of 4 interdisciplinary centers as part of a new initiative to address pressing ethical, legal, and social questions raised by recent advances in genetic and genomic research. The initiative is led by NHGRI and called the Centers for Excellence in Ethical, Legal and Social Implications Research and will have significant contributions from the U.S.

Department of Energy and the National Institute of Child Health and Human Development. About \$20 million in grants will be awarded over the next 5 years to 4 centers at Case Western Reserve University (Cleveland, OH); Duke University (Durham, NC), Stanford University (Palo Alto, CA), and the University of Washington (Seattle). Elizabeth Thomson, MS, RN, of NHGRI's Ethical, Legal and Social Implications Research Program, said, "The breadth and depth of knowledge and skills that these centers have pulled together is impressive. These centers truly are excellent in every sense of the word. We look forward to the many ways in which their research and other activities will serve to shape discussions and inform future policy decisions related to genetics and genomics." At Case Western, Eric Juengst, PhD, and colleagues will study ethical issues in the design and conduct of human genetic research, including issues regarding the protection of human subjects in research. At Duke, Robert Cook-Deegan, MD, will assemble a team to gather and analyze information about the role of publication, data and materials sharing, patenting, database protection, and other practices that may affect the flow of information in genomics research. At Stanford, Mildred Cho, PhD, and colleagues will focus on the ethical, legal, and social consequences of uncovering the genomic contributions to behavioral and neurologic conditions. At the University of Washington, Wylie Burke, MD, PhD, and colleagues will conduct research on the ethical, legal, and social factors that influence the translation of genetic information to improved human health. Three exploratory grants will also support investigators in planning and developing potential new centers at Georgetown University (Washington, DC), Howard University (Washington, DC), and the University of North Carolina (Chapel Hill).

*National Human Genome
Research Institute*

Scientists Establish Database of Cancer Drug Resistant Genes

Scientists at the National Cancer Institute (NCI), a part of the National Institutes of Health, have created a database of information about a group of genes associated with multidrug resistance in cancerous tumors. The research, published in the August 22 issue of *Cancer Cell*, details the gene expression of the 48-member family of proteins called ABC transporters. The NCI scientists identified associations between expression of individual ABC transporters in cancer cells and resistance to specific drugs. Although ABC transporters are primarily associated with drug resistance, the researchers report an association between some of these proteins and an increase in effectiveness of some cancer drugs. Their database should serve as a starting point for research into novel therapies designed to either evade or exploit the action of ABC transporters. ABC transport proteins are embedded in the cell membrane and regulate the traffic of many molecules, including hormones, lipids, and drugs, in and out of the cell. Because they transport toxic materials out of cells, many of these 48 proteins confer resistance to cancer drugs in humans. The study's lead authors were Jean-Philippe Annereau, PhD, and Gergely Szakács, MD, PhD, both visiting fellows at NCI's Center for Cancer Research. Gottesman, Szakács, and colleagues hope that their data will be used to find commonalities in compounds transported by MDR1, one of the ABC proteins most strongly associated with multidrug resistance. With this information, they could begin developing a drug to undermine MDR1's ability to transport drugs out of the cell. Expression of some ABC transporters, most notably MDR1, caused an increase in cancer cells' sensitivity to some drugs. This increase was unexpected, as MDR1 is

perhaps the best-known multidrug resistance protein. The researchers advocate further research to discover even more compounds that interact in this way with MDR1 and other ABC transporters.

National Cancer Institute

From the Literature

Each month the editor of Newsline selects articles on therapeutic, diagnostic, research, and practice issues in nuclear medicine from a range of international publications. Most selections come from outside the standard canon of nuclear medicine and radiology journals. These briefs are offered as a monthly window on the broad arena of medical and scientific endeavors in which nuclear medicine now plays an essential role.

¹⁸F-FDG PET and Survival After Resection of Liver Metastases

Results of a study on 5-year survival after preoperative ¹⁸F-FDG PET screening and resection of hepatic metastases from colorectal cancer were reported in the September issue of the *Annals of Surgery* (2004; 240:438–450). Fernandez et al. from the Mallinckrodt Institute of Radiology and the Washington University School of Medicine (St. Louis, MO) studied survival in a group of 100 patients (56 men, 44 women) who underwent screening and surgery and were followed up at a median of 31 months. Twelve patients survived longer than the 5-year study period, and 1 death was directly related to the surgical procedure. Survival in this study was compared with the 30% survival reported for patients undergoing hepatic resection for colorectal cancer metastases without PET screening. The actuarial 5-year survival rate in those who were screened was 58%. Primary tumor grade was found to be the only prognostic variable significantly correlated with overall survival. The authors con-

cluded that “screening by FDG PET is associated with excellent post-resection 5-year overall survival” and “appears to define a new cohort of patients in whom tumor grade is a very important prognostic variable.”

Annals of Surgery

PET Compared with SLN Biopsy and ALN Dissection

In a study e-published ahead of print on August 16 in the *Annals of Surgical Oncology*, Lovrics et al. from the Toronto Sunnybrook Regional Cancer Centre (Canada) compared the diagnostic abilities of PET with those of standard axillary lymph node dissection (ALND) and sentinel lymph node (SLN) biopsy in staging the axilla in women with early breast cancer. The study included 98 patients with stage I or II breast cancer who underwent whole-body PET imaging before ALND or SLN biopsy, in a prospective, blinded protocol. Sensitivity, specificity, positive likelihood ratio, positive predictive value, and false-negative rates were 40%, 97%, 14.4, 75%, and 60%, respectively, for PET. PET accuracy was improved in patients with high-grade and larger tumors. The authors found that the sensitivity of PET compared with ALND and SLN biopsy was low, but PET scanning had high specificity and positive predictive values. They conclude that although PET scanning cannot replace histologic staging in early breast cancer, “the low rate of false-positive findings suggests that PET can identify women who can forego SLN biopsy and require full axillary dissection.”

Annals of Surgical Oncology

PET and Internal Mammary Lymph Nodes

Bellon et al. from the University of Washington Medical Center (Seattle) reported in the August issue of the *American Journal of Clinical Oncology* (2004;27:407–410) on a study

designed to assess the utility of ^{18}F -FDG PET in evaluating the internal mammary lymph node chain in patients with suspected locally advanced breast cancer. The retrospective study included the records of 28 patients who underwent PET imaging before neoadjuvant chemotherapy. Internal mammary lymph node uptake on PET was compared with standard radiographic imaging. ^{18}F -FDG uptake in the internal mammary chain was visualized with PET in 7 patients, whereas conventional chest imaging identified none of these metastases. Uptake on PET was associated with large size of primary tumor and with inflammatory disease and predicted failure of treatment. The authors concluded that ^{18}F -FDG PET appears to be a useful noninvasive modality to detect internal mammary metastases in locally advanced breast cancer but that additional research is needed to confirm these findings.

American Journal of Clinical Oncology

SLN Biopsy in Pregnant Patients

The question of the safety of lymphoscintigraphy and sentinel lymph node (SLN) biopsy in pregnant women was addressed by Gentilini et al. from the European Institute of Oncology (Milan, Italy) in the September issue of *Annals of Oncology* (2004;15:1348–1351). The study included 26 premenopausal patients who were not pregnant and who were slated to undergo lymphoscintigraphy for breast cancer. Each patient underwent peritumoral injection of approximately 12 MBq of $^{99\text{m}}\text{Tc}$ -human serum albumin nanocolloids. Static images were acquired at 15 minutes and 16 hours after injection, and whole-body scintigraphy was also performed at the 16-hour mark. Radioactivity in urine and blood was evaluated at designated time periods, and thermoluminescent dosimeters

were placed on the injection site, at 2 points between the injection site and the epigastrium, and on the epigastrium, umbilicus, and hypogastrium, and were removed before surgery. The images showed no radiotracer concentration, except at the injection site and in the sentinel node. In all patients, the total activity excreted within the first 16 hours was <2% of the injected activity. In 23 of 26 patients, all absorbed dose measurements were lower than the sensitivity of the dosimeters (<10 μGy). Ranges of measured absorbed doses at the level of the epigastrium, umbilicus, and hypogastrium in the remaining 3 patients were 40–320, 120–250, and 30–140 μGy , respectively. The authors concluded that, using this technique, lymphoscintigraphy and SLN biopsy can be performed safely during pregnancy, because “the very low prenatal doses from this diagnostic procedure, when properly performed, do not significantly increase the risk of prenatal death, malformation, or mental impairment.”

Annals of Oncology

PET Focuses on Revenge

“Revenge is Sweet!” announced headlines around the world in August after the publication of a feature article in *Science* (2004; 305:1254–1258). de Quervain et al. from the University of Zurich (Switzerland) reported on a study in which H_2^{15}O PET was used in a game setting to evaluate neural responses to the experience of exacting revenge for perceived unfairness. Each trial involved 2 male participants exchanging units of money in a game setting. When Player A acted in a way perceived as unfair, Player B had the opportunity to exact revenge by taking money away. PET imaging showed uptake in the dorsal striatum when Player B made the decision to exact revenge. The dorsal striatum has been implicated in the processing of rewards that accrue as a result of goal-directed actions. In some instances, Player B had to give up money (pay)

in order to exact monetary revenge. The greater the uptake at imaging, the greater was Player B's willingness to pay to exact revenge. The authors, representing a cross-disciplinary effort in psychiatry, economics, and nuclear medicine, noted that evolutionary models and empirical evidence indicate that such altruistic punishment for breaking social norms has been a decisive force in the evolution of human cooperation. They concluded that "our findings support the hypothesis that people derive satisfaction from punishing norm violations and that the activation in the dorsal striatum reflects the anticipated satisfaction from punishing defectors."

Science

PET and Survival After Lung Resection

Downey et al. from the Memorial Sloan-Kettering Cancer Center (New York, NY) reported in the August issue of the *Journal of Clinical Oncology* (2004;15:3255-3260) on a retrospective review of postoperative lung cancer patients to evaluate whether survival could be predicted by the preoperative standardized uptake value (SUV) of ^{18}F -FDG in primary tumor as measured with PET. The study included 100 patients (48 men, 52 women) who had been imaged within 90 days before surgical resection for non-small cell lung cancer or carcinoid tumor. The median follow-up for surviving patients was 28 months (range, 16-18 months). The median maximal SUV (SUV_{max}) was 9. For patients in whom SUV_{max} was >9 , 2-year survival was at 68%, whereas for those in whom SUV_{max} was <9 this figure was 96%. Analysis showed that only tumor size >3 cm and $\text{SUV}_{\text{max}} >9$ were significant inverse predictors of survival. The authors concluded that not only is SUV a predictor of overall survival after resection in these patients, but "the addition of SUV_{max} to pathologic tumor size identifies a subgroup of patients at highest risk for death as a

result of recurrent disease after resection."

Journal of Clinical Oncology

PET in Small-Cell Lung Cancer

The potential benefits of ^{18}F -FDG PET in staging and management of patients with presumed limited-stage small-cell lung cancer (SCLC) was investigated by Bradley et al. from the Mallinckrodt Institute of Radiology (St. Louis, MO) and discussed in the August issue of the *Journal of Clinical Oncology* (2004;22:3248-3254). The study included 24 patients who had been diagnosed with limited-stage SCLC on the basis of conventional staging methods. Each patient underwent ^{18}F -FDG PET imaging to determine the presence of extensive-stage disease. PET images were evaluated for evidence of extensive-stage disease, and each patient was staged using the TNM system, with and without the addition of PET data. PET identified extensive-stage disease that led to upstaging in 2 patients. PET also correctly identified tumor in each SCLC area identified on CT. Unsuspected regional nodal metastases were identified on PET in 6 (25%) patients, which led to significant changes in radiation treatment planning. The authors concluded that ^{18}F -FDG PET "has high sensitivity for SCLC and appears to be of value for initial staging and treatment planning of patients with presumed limited-stage disease."

Journal of Clinical Oncology

Brain SPECT Assesses Alcohol's Effects

Nuclear medicine techniques continue to illuminate effects in the brain caused by systemic disease and/or diseases in other parts of the body. In the September issue of the *European Journal of Gastroenterology and Hepatology* (2004;16:885-890), Burra et al. from the University of Padua (Italy) reported on a study designed to determine whether differ-

ent underlying causes of liver cirrhosis account for previously documented changes in regional cerebral blood flow (rCBF). The study included 50 patients with end-stage liver disease (diagnoses: alcoholism = 19; hepatitis B, C, or D = 14; alcoholism with viral involvement = 5; cholestatic disease [primary biliary cirrhosis and primary sclerosing cholangitis] = 12) and 13 control subjects. All participants had abstained from alcohol and neuroactive drugs for 6 months before the study. Each participant underwent a $^{99\text{m}}\text{Tc}$ -hexamethylpropyleneamine oxime scan. The authors found that rCBF was significantly lower in patients with liver cirrhosis than in controls and, among cirrhotics, it was lower in alcoholic and viral cirrhosis than in cholestatic liver disease. They also reported that in patients with previous alcohol abuse, rCBF was significantly more reduced in the frontal and temporal regions than in patients without previous alcohol abuse.

European Journal of Gastroenterology and Hepatology

PET and Cognitive Reserve in Aging

In a study e-published ahead of print on August 5 in *Cerebral Cortex*, Stern et al. from the College of Physicians and Surgeons of Columbia University and the New York State Psychiatric Institute (New York, NY) use H_2^{15}O PET imaging to explore the relationship between brain network expression during the performance of a memory test and a standardized index of cognitive reserve. The study included 17 healthy older and 20 young adults who were imaged while performing a serial recognition memory task under 2 conditions: low demand (with a unique shape presented for memory in each trial) and titrated demand (with a study list size adjusted so that subjects recalled shapes with a 75% accuracy). The index of cognitive reserve was based on standardized testing scores. The authors identified

the most active functionally connected regions (or topography) that changed in expression between the 2 task conditions: the right hippocampus, posterior insula, thalamus, and right and left operculum. During the tasks, deactivation was noted in the right lingual gyrus, inferior parietal lobe and association cortex, left posterior cingulate, and right and left calcarine cortex. They identified significant differences in cognitive reserve and in areas of activity between the young and older brains. The authors concluded that “for the old subjects this topography may represent an altered, compensatory network that is used to maintain function in the face of age-related physiological changes.”

Cerebral Cortex

High-Res PET in Cervical Spinal Cord Imaging

Uchida et al. from the University of Fukui (Japan) reported in the first issue of *The Journal of Neurosurgery: Spine* (2004;1:72–79) on a study to assess whether ^{18}F -FDG PET could be used to visualize deterioration of cervical spinal cord function associated with various degrees of compression and compressive myelopathy. The study included 23 patients who were imaged before and after decompressive surgery for myelopathy. The results of the imaging were compared with neurologic scores and MR findings. ^{18}F -FDG uptake values in the cervical cord correlated with both the pre- and postoperative neurologic scores, as well as with the rate of neurologic improvement after surgery, but did not correlate with MR findings. The authors concluded that “high-resolution FDG PET imaging provides useful qualitative and quantitative estimates of impaired metabolic activity of the compromised cervical cord that correlate closely with the severity of neurological dysfunction.”

The Journal of Neurosurgery: Spine

SPECT Confirms Brain Death

Several articles have appeared in the past 2 years documenting the reliability of radionuclide cerebral blood perfusion imaging in confirming brain death in individuals with a continued heartbeat. In a study published in the September–October issue of *Medical Principles and Practice* (2004;13:267–272), Al-Shammri and Al-Feeli from Kuwait University reported on a study that included 18 patients with severe brain injury who were on full life support. Dynamic and planar $^{99\text{m}}\text{Tc}$ -hexamethylpropyleneamine oxime SPECT brain scintigraphy was performed and compared with other neurologic and angiographic measures. SPECT showed intracranial cerebral perfusion in only 1 patient, in whom initial posterior fossa activity was not present on a scan subsequently obtained at 24 hours. Despite these findings, in this study no patient was declared dead until after the emergence of cardiac asystole, when life support was suspended. The authors concluded that “radionuclide brain perfusion imaging is reliable, reproducible, noninvasive and simple to perform for the confirmation of brain death and as such we recommend it as an alternative to exhaustive neurophysiological tests and invasive catheter angiography.”

Medical Principles and Practice

^{123}I - β -CIT SPECT to Rule Out Parkinsonism

Jennings et al. from the Institute for Neurodegenerative Disorders (New Haven, CT) reported in the August issue of the *Archives of Neurology* (2004;61:1224–1229) on an investigation designed to compare the incremental value of ^{123}I - β -carboxymethoxy-3- β -(4-iodophenyl) tropane (^{123}I -CIT) SPECT over clinical diagnosis in patients with suspected parkinsonian syndrome (PS). The study included 35 patients referred by neurologists for imaging for suspected PS. On the basis of imag-

ing, a diagnosis of positive or negative PS was assigned. Clinical examination at 6-month follow-up was made by a movement disorder expert blinded to the imaging data. When the initial referring physician diagnoses were compared with the follow-up evaluation, a 25.7% disagreement was noted. When the imaging diagnoses were compared with the follow-up evaluation, the disagreement was only 8.6%. The authors concluded that “ ^{123}I -CIT SPECT at baseline appears to be a useful diagnostic tool to detect patients thought to have PS at baseline but who, after follow-up, do not.”

Archives of Neurology

Diagnostic Judgment in SPECT

Dougall et al. from the Royal Edinburgh Hospital (Scotland, UK) reported in the July issue of *Psychiatry Research* (2004;30:131:157–168) on an investigation of diagnostic criteria used by nuclear medicine specialists, psychiatrists, and physicists in interpreting $^{99\text{m}}\text{Tc}$ -hexamethylpropyleneamine oxime SPECT scans acquired in patients with probable Alzheimer-type dementia or major depressive episodes and in healthy volunteers. The experts examined 158 perfusion scans as stand-alones and then together with statistical parametric maps (SPMs). Across the spectrum of experts, sensitivity of diagnostic judgment was significantly and negatively correlated with the importance attributed to reduced regional perfusion in the parietal lobes. With SPMs, area under the receiver operating characteristic curve was significantly reduced with raters' increased diagnostic reliance on frontal lobe perfusion deficits. Sensitivity was greater with SPM for patients younger than 70 years and with severe dementia. The more importance experts placed on parietal (symmetrical) perfusion deficits, the less sensitive and the more specific their diagnostic judgment. The authors concluded that “using multiple raters

Royal Becomes Director of ABNM

On July 1, Henry Royal, MD, became the third executive director of the American Board of Nuclear Medicine (ABNM). He assumed the office after completion of his term as president of the SNM. The members of ABNM are pleased that he has rejoined the board and look forward to many years of guidance and assistance in board activities. He brings a strong scientific, clinical, academic, and administrative background to the job.

Royal is currently a professor of radiology at Washington University School of Medicine (St. Louis, MO), where he is also associate director of nuclear medicine at the Mallinckrodt Institute of Radiology. He did his internal medicine training at Brown University (Providence, RI) and his nuclear medicine training at Harvard University (Boston, MA). He was a member of the ABNM from 1993 to 1999. He is currently an investigator for the Prospective Investigation of Pulmonary Embolism Diagnosis II study. In addition to ventilation/perfusion imaging, his interests include medical decision making and radiation effects. He has been listed in *Best Doctors in America* since the first edition in 1992.

He was the co-team leader of the health effects section of the International Atomic Energy Agency's Interna-

tional Chernobyl Project and a member of the Presidential Advisory Committee on Human Radiation Experiments. He has been a member of several National Academy of Sciences committees, including the Committee on Assessment of Center for Disease Control Radiation Studies, the Committee on Guidelines for Thyroid Cancer Screening After Exposure to Radioactive Iodine Fallout, and the Committee on Public Health Implications of Exposure to ^{131}I from Nevada Atomic Bomb Tests.

He is currently a member of the board of directors of the National Council on Radiation Protection and Measurements (NCRP) and the chair of the NCRP Scientific Committee on Radiation Effects on the Thyroid. In addition, he is the scientific chair of the Veterans' Advisory Committee on Environmental Hazards and a member of the U.S. delegation to the United Nations Scientific Committee on the Effects of Atomic Radiation.

Michael M. Graham, MD, PhD
Chair, ABNM



Henry Royal, MD

in large patient samples may provide a way of identifying successful explicit diagnostic strategies for clinical image analysis."

Psychiatry Research

Value of Remnant Ablation for Well-Differentiated Thyroid Cancer

Sawka et al. from McMaster University (Hamilton, Ontario) reported in the August issue of the *Journal of Clinical Endocrinology and Metabolism* (2004;89:3668–3676) on a review of the literature to determine whether radioactive iodine remnant ablation decreases the risk of thyroid cancer-related death or recurrence after bilateral thyroidectomy for papillary or follicular thyroid cancer. The authors reviewed 1,543 English references, including a number of large cohort studies and reported the results of a multivariate analysis of

pooled results. They concluded that "radioactive iodine ablation may be beneficial in decreasing recurrence of well-differentiated thyroid cancer; however, results are inconsistent among centers for some outcomes, and the incremental benefit of remnant ablation in low-risk patients treated with bilateral thyroidectomy and thyroid hormone suppressive therapy is unclear."

Journal of Clinical Endocrinology and Metabolism

Thyroid Blockade During Radiation Emergencies

In the June issue of the *Journal of Radiation Research (Tokyo)* (2004; 45:201–204), Takamura et al. from the Nagasaki University Graduate School of Biomedical Sciences (Japan) reported on 1 of a number of studies to evaluate iodine prophylaxis in the event of a public radiation emergency in an iodine-rich area

such as Japan. They investigated the effect of stable iodine on thyroid gland blockade in patients with hyperthyroidism to make a preliminary evaluation of the appropriate dose of iodine prophylaxis in a hypothetical situation in which radioiodine is released to the environment. The study included 8 patients who received 50- or 100-mg doses of potassium iodide (38 and 76 mg of iodide, respectively). These doses suppressed thyroid uptake of ^{123}I for 24 h by 73.3% and 79.5%, respectively. No side effects were observed. The authors concluded that the study demonstrated that "a single oral administration of 38 mg of iodide produces a thyroid-blocking effect equivalent to that of 76 mg of iodide, suggesting that a reevaluation of the stable iodine dosage during radiation emergencies in iodine-rich areas such as Japan is warranted."

Journal of Radiation Research (Tokyo)