Robert C. Stadalnik, MD, to Receive the Berson-Yalow Award for Excellence in Radioassay

Robert C. Stadalnik, MD, professor of radiology at the University of California at Davis, has been selected as this year's recipient of the Berson-Yalow Award by The Society of Nuclear Medicine. His group's scientific abstract, "Validation of In Vivo Measurements of Receptor Biochemistry Via In Vitro Radioassay: [Tc-99m] Galactosyl-Neoglycoalbumin (TcNGA) as a Prototype Model" was adjudged the best in the radioimmunoassay (RIA) category by the SNM Selection Committee. Co-authors David Vera, PhD; Masatoshi Kudo, MD, PhD; and Walter L. Trudeau, MD, are scheduled to receive certificates at the award's presentation.

The Berson-Yalow Award commemorates Rosalyn S. Yalow, PhD, and the late Solomon A. Berson, MD, who developed the radioimmunoassay (RIA) technique in the 1950s. The SNM award was established by the Education and Research Foundation of the SNM in 1977, the year that Dr. Yalow received the Nobel Prize in Physiology or Medicine for the RIA procedure. The purpose of the award is to honor investigators who have submitted "the most original scientific abstracts in, and the most significant contributions to, basic or clinical radioassay."

Dr. Stadalnik's paper represents the culmination of a 15-year project resulting in the first validation of the use of receptor radiopharmaceuticals to measure the parameters of tissue function. "Our work with [Tc 99m] galactosyl-neoglycoalbumin," states Dr. Stadalnik in a paper on the experimental and clinical aspects of receptor-binding radiopharmaceuticals, "was an attempt to design a hepatic radiopharmaceutical with greater diagnostic power than technetium sulfur colloid. The hypothesis is that the biomolecular nature of receptor-ligand binding, which is not exhibited by Tc-sulfur colloid, will provide a more powerful method of screening liver disease. . . Receptor-binding mechanisms are beginning to provide nuclear medicine with a new generation of radiopharmaceuticals that will reflect the original philosophy of our discipline: the measurement of tissue functions."

William C. Eckelman, PhD, who became familiar with Dr. Stadalnik's work while at Davis, envisions several positive repercussions from it. "It is a key study in the understanding of various parameters in the development of receptor-binding radiotracers," he said. "[Dr. Stadalnik has] carried [his work] past a compound localizing to the point where it can measure—by external imaging—a change in receptor concentration. [In this way he was able to] correlate [his project] with disease outcome. In addition, he praised the use of technetium as a radionuclide that is readily available in the clinical community. He believes that this factor will enable a widespread use of the technique. Dr. Eckelman is currently vice-president of diagnostics research & development of the Squibb Institute for Medical Research in Brunswick, New Jersey.

Commenting on the significance of the project, Kenneth A. Krohn, PhD, remarked, "it's one of very few instances where in vitro and in vivo were shown to agree very nicely. . . The key is to do two separate experiments and get the same answer. . . Bob did this excellently." Dr. Krohn also noted that the abstract represented the present-day extrapolation of the work that Drs. Berson and Yalow and their colleagues performed. Dr. Krohn is professor of radiology and radiation oncology and adjunct professor of chemistry at the University of Washington at Seattle.

Robert C. Stadalnik, MD

In discussing criteria for the award, Selection Committee Chairman Michael J. Welch, PhD, noted that nominations for the award are culled from a vast pool of "about 1600 abstracts." From these, the vice-chairman of the program committee nominates a small number of papers which are then presented to the selection committee. These papers

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are in turn reviewed "specifically for the principles established by Drs. Berson and Yalow." Speaking on behalf of the committee, Dr. Welch, said that Dr. Stadalnik's abstract was outstanding because it employed the principle of RIA and subsequently validated it through imaging techniques.

The Radioimmunoassay Technique

In RIA, an antigen is added to a solution of radioantigen-antibody complex, and the cold antigen competes with the labeled antigen to bind with the antibody. The unbound antigen is later separated from the complexes, and the radioactivity in both portions is measured with a gamma counter. By determining the ratio of labeled bound antigen to labeled free antigen, and comparing that ratio to standard measurements of known samples, the concentration of antigen in the unknown sample can be determined. The technique was further developed to measure non-hormonal substances such as drugs, vitamins, enzymes, viruses, serum proteins, and tumor antigens, and binding agents other than antibodies have been used for "radioligand" assays.

Born in Philadelphia, Dr. Stadalnik received his MD from the University of Medicine and Dentistry of New Jersey at the New Jersey Medical School in 1966. Dr. Stadalnik served his residency in radiology at Pennsylvania Hospital and the University of Pennsylvania. In 1970, he took a clinical instructor position at the University of California at Davis, and in 1983, he was appointed professor of radiology there. In April of that year he was named chief of the division of nuclear medicine.

Dr. Stadalnik praised the efforts of the entire team for the achievement. Dr. Vera, assistant professor adjunct at the University of California at Davis, has been connected with the project since its inception. Dr. Kudo, under Dr. Stadalnik's supervision, was responsible for the working of the assay technique of the project using a 10 milligram tissue sample. He is currently the assistant chief of gastroenterology at Kobe General Hospital in Japan. Dr. Trudeau is currently professor of clinical medicine at the University of California at Davis.

Dr. Kudo will present the winning abstract at the SNM Business Meeting on Tuesday, June 13th, in St. Louis, Missouri.

Richard J. Arnold

SNM/ACNP Statement on Reimbursement for SPECT Studies

SPECT imaging is an extension of planar imaging designed to enhance the diagnostic accuracy of nuclear medicine gamma imaging. Most SPECT systems employ scintillation cameras used in routine gamma imaging but in a differnet mode with a computer to produce tomographic images of the physiologic processes within the body. SPECT utilizes the same radiopharmaceuticals normally employed in nuclear medicine gamma imaging.

As in diagnostic x-ray, SPECT tomography produces images of greater diagnostic accuracy compared to standard gamma imaging. In view of its proven utility, many small as well as large hospitals and clinics have acquired the technology to perform SPECT, making it available to most nuclear medicine practitioners and their patients.

The ACNP and SNM are convinced of SPECT's diagnostic accuracy and in the past three years have addressed its clinical advantages and cost effectiveness in conferences and publications. SPECT imaging of myocardial perfusion using radiothallium has become a mainstay in the assessment of coronary artery disease. SPECT imaging of the skeleton has become an invaluable diagnostic application in orthopedics, arthritis and infectious lesions. SPECT imaging of the brain produces functional tomographic images that rival other techniques used to detect a variety of brain diseases. These and other SPECT procedures are daily being applied clinically throughout the United States.

The evidence that exists at the present time demonstrates that the addition of SPECT to standard nuclear medicine examinations increases the efficacy of nuclear medicine examinations and is to be encouraged. The American Medical Association's CPT committee has acknowledged this fact by the addition of SPECT codes to CPT-4.

It is the ACNP/SNM opinion that SPECT is a natural extension of standard nuclear medicine imaging and its enhanced diagnostic accuracy should be reimbursed at appropriate levels to compensate for the additional activities required to perform and interpret this more compex, but cost-effective, examination. ■