

Dear Colleagues,

brachytherapy achievements often go unnoticed, but it is worth noting that every week we can find interesting news. Advanced Medical Isotope Corporation (AMIC), a company engaged in the production and distribution of medical isotopes, announced the execution of an exclusive world-wide license for patented technology for a proprietary brachytherapy seed with a fast-dissolving matrix for optimized delivery of radionuclides to cancer tissue. The resorbable seed provides controlled delivery of insoluble **yttrium-90** microspheres. The new seed is a joint invention by radiochemists and medical physicists at Battelle in Richland, Washington, and pharmaceutical chemists at the University of Utah in Salt Lake City, Utah. AMIC is testing and conducting research to develop the new brachytherapy seed, and anticipates filing Premarket Notification with the FDA in October, 2010. According to AMIC CEO James C. Katzaroff, "Yttrium-90 is an important high-energy beta-emitting medical isotope with outstanding potential for treating highly localized cancer. Controlled delivery of yttrium-90 microspheres in fast-resorbable seeds should provide a unique opportunity to maximize the therapeutic index. This feature should provide high-dose therapy of non-resectable solid tumors with minimal side-effects to neighboring normal tissues".

AMIC anticipates the use of these seeds for prostate cancer as well as for many of the more radiation-resistant cancers such as brain tumors, head and neck tumors, and liver cancer. The resorbable seeds resemble conventional metal brachytherapy seeds and may be placed by direct injection using standard needles, grids, and imaging systems. However, AMIC expects that the technology should enable seed manufacturing at lower-cost relative to conventional welded-metal seeds. Unlike current seeds that remain in the body emitting low levels of penetrating photon radiation for extended periods of time, yttrium-90 decays with a shorter physical half-life (2.7 days), with negligible radiation outside the patient. The shorter half-life also suggests a potentially higher biological effective dose (BED) value for cancer cell destruction. The insoluble form of the yttrium-90 microspheres effectively confines the radioactivity to the injection site and limits potential dissolution into blood. "Yttrium-90 continues to demonstrate outstanding properties of a preferred medical isotope for cancer treatment", said AMIC Chief Science Officer, Dr. Robert Schenter, "it has been used very effectively as microspheres for treating liver cancer and in cell-directed immunotherapy (Zevalin) for treating non-Hodgkin's Lymphoma". Yttrium-90 is readily available from commercial suppliers.

Another news comes from Richland, Washington – IsoRay, Inc. announced another milestone in the use of Cesium-131 (Cs-131) brachytherapy seeds (internal radiation therapy). Doctors at a world renowned medical facility have performed the world's first Cs-131 brachytherapy seed implant following a wedge resection of a lung tumor which originated from a form of malignant uterine cancer. Initially used to treat primary cancers, Cs-131 seeds are now being used to treat metastasized cancer. [http://www.isoray.com/history\\_of\\_brachytherapy.asp](http://www.isoray.com/history_of_brachytherapy.asp).

The Cs-131 brachytherapy seeds implant was performed on a patient with a history of uterine cancer, who was disease free until the cancer reoccurred in a lung. The patient did not have the lung capacity to undergo a surgical procedure to remove the cancerous lobe of the lung (lobectomy). Cs-131 was selected because of its high dose rate and its ability to have a positive impact in controlling the highly aggressive tumor. The use of Cs-131 brachytherapy seeds for metastasized lung cancer represents the latest advancement in the expanding adoption of this groundbreaking internal radiation therapy for cancers throughout the body. Cs-131 is now being used successfully to treat prostate, lung, colon, ocular, head and neck cancers at more than 100 centers throughout the U.S.

IBt Bebig has announced during the European Society for Therapeutic Radiology and Oncology (ESTRO) Congress in Barcelona introducing the SmartSeed® for permanent brachytherapy, an extension of the world's largest radioactive implantable medical devices portfolio for the treatment of localized cancer. The SmartSeed® solution provides Radiation Oncologists and Urologists with a low radioactive implant technique, which can help them to better treat their patients. With SmartSeed®, clinicians can control the assembly of the radioactive strand configuration individually using variable spacing of the radioactive seeds, primarily in minimally invasive prostate seed implantations, in order to realize the optimal dose distribution. The new SmartLoader® provides customizable SmartSeed® configuration for permanent brachytherapy. It makes it easier for clinicians and medical physicists to assemble the SmartSeed® configuration, which is based on a ball and socket connecting system, providing the necessary stiffness and flexibility of the strand. With the SmartLoader® IBt Bebig is offering the clinicians, medical physicists and nurses a device with fully integrated radiation protection. The new intuitive device, which improves the speed of handling of the strand configuration, contributes to minimize the procedure time in the operating theater.

Kind regards  
Editor-in-Chief  
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