

Dear Colleagues,

there are many important achievements in brachytherapy which are sometimes unrecognized or overlooked. Some chosen examples:

IsoRay, Inc. announced on 15 June that doctors at Curtis and Elizabeth Anderson Cancer Institute and WellSpan Health's York Cancer Center started using Cesium-131 seeds for the treatment of lung cancer. Radiation Oncologist Dr. Amit Shah, Thoracic Surgeon Dr. Brian Pettiford, and Jadwiga Wojcicka, Ph.D., Director of Medical Physics, worked together using Cesium-131. "Intraoperative Brachytherapy with Cesium-131 offers a method to target radiotherapy to reduce local recurrences (of cancer) without excessive radiation to the remaining lung tissue. Cesium-131 offers several advantages by allowing radiation to be delivered in a shorter time period which may be helpful in higher grade tumors," said Dr. Shah. In addition to lung cancers, more than 100 centers across the US are using Cesium-131 to treat colon, head and neck, ocular melanoma, and prostate cancers. And in Europe – should we give up?

And another news from the same company – IsoRay has gained exclusive worldwide rights to distribute Hologic's GliSite dual balloon system for delivering radiation therapy to treat brain cancer. According to Richland, Washington-based IsoRay, the GliSite is the only balloon catheter device approved by the FDA for this kind treatment. The GliSite system places a specified high dose of a liquid radiation source in the areas most likely to contain cancer after brain tumor removal and is less likely to damage healthy brain tissue. It helps eliminate the ability for the tumor to reoccur, which in turn impacts patient longevity. IsoRay is also moving forward with the regulatory approval process for its new liquid form of Cesium-131, an exciting advance in brachytherapy for the treatment of brain cancer, that would be delivered using the GliSite radiation therapy system. Previously, approximately 500 GliSite cases were performed annually at some 40 hospitals. GliSite therapy has established reimbursement for both in-patient and out-patient settings.

"Brachytherapy: A US and European Market Report" announced by Global Industry Analysts, Inc., provides a comprehensive review of prevailing market issues and trends, competitive scenario, and recent industry activity in the brachytherapy market. Analytics for the period 2005-2015 provide a comprehensive understanding of markets including the United States and Europe. The markets are analyzed in terms of Number of Procedures (Thousands) and Annual Revenues (US\$ Million) for the segments – Implantable Prostate Seed and Post-Surgical Brachytherapy. US Brachytherapy Market will reach \$1.6 Billion by 2015, According to New Report by Global Industry Analysts, Inc.

And in Europe? What we expect?

IBt Bebig has announced on 17 June its first results on a radiobiological research program for monotherapy of early stage breast cancer utilizing permanent implant brachytherapy. Accelerated Partial Breast Irradiation (APBI) is therefore investigated in clinical trials and might be even replaced by a monotherapy using permanent implant brachytherapy. For the patient, there is clearly a practical advantage to be treated by brachytherapy rather than by EBRT: a reduction of treatment time. A brachytherapy procedure is done in one day, while for EBRT patient needs to come 25 to 40 consecutive days for treatment sessions. A scientific paper was published in June 2010 in The International Journal of Medical Physics (American Association of Physicists in Medicine) about the radiobiological investigation on dose and dose rate for permanent brachytherapy of breast using I-125 (Iodine) or Pd-103 (Palladium) sources. It addresses the question of what could be the appropriate dose and dose rate for permanent seed implants for breast cancer as monotherapy for early-stage breast cancer. Today permanent brachytherapy is mostly used to treat prostate cancer, but there are now more and more interests to use this treatment option also for early stage breast cancer. In 2007, IBt Bebig already partnered with the University Hospital of Liège (CHU), Belgium, to do a series of trials as described in a scientific paper published in the International Journal of Radiation Oncology.

Another interesting news concern clinical benefits of electronic brachytherapy from Xofigo substantiated for the treatment of multiple cancers. The clinical benefits of isotope-free electronic radiation therapy delivered directly to cancer sites with minimal exposure to surrounding healthy tissue continues to be substantiated by multiple publications, according to Xofigo, Inc., developer of the Axxent[®] Electronic Brachytherapy, eBx[™] System. The leading provider of FDA-cleared Electronic Brachytherapy Systems, Xofigo provides systems for single-dose intraoperative radiation therapy (IORT) and accelerated brachytherapy applications. The most recent publication is four-year data from the TARGIT-A (Targeted Intraoperative Radiation Therapy) multicenter clinical trial presented this week at the 46th Annual ASCO Meeting and published in the current issue of the "The Lancet". The TARGIT-A Trial is a randomized controlled trial designed to assess the equivalency of intraoperative radiotherapy with a single-dose against standard three to six week external beam radiotherapy after breast conserving surgery in women 45 years and over with invasive ductal carcinoma.

The 12-month results suggest that IORT utilizing Xofigo's Electronic Brachytherapy is emerging as a novel, patient and physician friendly alternative to Whole Radiation Therapy (WBRT) as well as APBI in a selected group of patients with early breast cancer. At a mean follow-up of 12 months, overall results were encouraging with excellent scores achieved in cosmesis and patient satisfaction. While long-term follow-up will continue, no recurrences have been observed to date.

As we can see there are a lot of interesting events and achievements in brachytherapy. I hope that more and more from them will be published in our Journal.

With this issue we are continuing development of JCB. The present issue of the JCB includes five original manuscripts and one review in Educational Corner. Clinical manuscripts concern cervical cancer and tongue cancer. In two physics contributions problems of dose volume uniformity index and Quality Assurance procedures are discussed. In radiobiological paper influence of interval length on PDR dosis values is analyzed. And in the Educational Corner some indications for pediatric brachytherapy are present. I think that it's a good course when radiation oncologists, physicists and radiobiologists want to work together.

regards

Editor-in-Chief

Janusz Skowronek, MD, PhD, Ass. Prof.