

Rhenium 188: The Poor Man's Yttrium

After the landmark, IAEA trial confirming the potential of intra-arterially used Re 188 Lipiodol for the treatment of inoperable hepatocellular carcinoma (HCC), it was surprising to note that none of the participating centers took this work forward. To a nonnuclear physician or scientist, it would seem baffling, but we in NM are well aware of the difficulties in instituting a new radionuclide therapy procedure in our center. Lack of properly conducted trials, data or evidence; differing regulatory frameworks across countries, lack of funding agencies and no pharmaceutical support are some of the many hindrances that we in NM routinely take in our strides.

Thus, it would come as a surprise for the majority of the NM world, that there is a recent resurgence of this treatment option centered around India and spreading slowly to other Asian countries. When we at KMCH, Coimbatore started this program in 2013, we had to work hard at the labeling, dosimetry, and technical aspects with almost no one to help us after the untimely demise of Dr. Ajit Padhy.

However, we have kept working to improve all aspects of our technique and have achieved commendable results and with the untiring support and resorcefulness of Prof. Baum. Through WARMTH, which initiated this endeavor, we formed the WARMTH Rhenium project; a task force to enable other departments to start a Re based therapy program.

To give potential users a hands-on feel, as well as to get under one roof all past, present, and future users, researchers, scientists and clinicians of Re 188, the 1st World Rhenium conference was hosted by WARMTH and KMCH in 2015 in Coimbatore, featuring faculty and delegates from over 40 countries. With the help of many of these faculties, we have been able to further develop our radiochemistry, pharmacy and dosimetric techniques for Re 188 to include skeletal pain palliation, synoviorthesis, NET therapy and even PSMA labeling.

Having made sufficient amount of noise about Re 188 we have an unprecedented 3-4 commercial manufacturers who have come forward to support this program. From almost no single regular geneator supplier, we even have a subsidized WARMTH Re generator, which has been distributed to all the

new centers that have started their Re 188 therapy program under the WARMTH Re project. It has been heartening to see 4 new centers in India itself, other than us treating HCC with Re 188 Lipiodol and 3 other centers doing research on new Re188 molecules. We have handheld the 1st state Central Hospital in Mongolia to start a similar facility, are collaborating with People's Republic of China for their Phase IIB trial on Re HEDP, are helping a cancer center in Pakistan for their skeletal pain palliation program and have lined up centers in Philippines, Vietnam, South Africa, and Myanmar to start Re based treatment programs.

Re 188 has the potential to be the workhorse of an NM therapy program, with its availability in a generator form, a strong Beta, imageable Gamma and a similar chemistry to Tc99m. With more than 70% of the world's HCC in Asia, where the vast majority of patients do not have any health insurance, it is imperative that a cost-effective palliative procedure be available. Even a country like India with a well-developed NM program and thousands of patients suffering from inoperable HCC, only 100-120 patients are treated a year with Y-90 radioconjugates, due to the exorbitant cost.

In comparison, just these 5 centers in India that have been started under the WARMTH Rhenium project have treated more than 100 HCC patients this year itself. In addition, we have managed to instill encouragement to the Re researchers all around the world, ranging from France, Iran, Taiwan, Macedonia, UK, Mexico, USA, Africa, Australia to South and South East Asian countries to work on various therapeutic solutions with Re 188 and that this isotope has a future. Toward this concerted effort, KMCH will be hosting again the 2nd World Rhenium Congress at Coimbatore on August 14-15th, 2017. Attending it would give you a holistic idea about the ease of setting up a Re based facility as well as the innumerable therapeutic options at your disposal.

As St Francis of Assissi said, we started by doing whats necessary; we are doing whats possible and then with your continued support we will be soon doing the impossible.

Ajit Shinto

Department of Nuclear Medicine, Kovai Medical Center and
Hospital, Coimbatore, Tamil Nadu, India
E-mail: ajitshinto@gmail.com

This is an open access article distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 3.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as the author is credited and the new creations are licensed under the identical terms.

Access this article online**Quick Response Code:****Website:**

www.wjnm.org

DOI:

10.4103/1450-1147.198225

How to cite this article: Shinto A. Rhenium 188: The poor Man's yttrium. World J Nucl Med 2017;16:1-2.