

Clinical development of ^{166}Ho -PLLA microspheres for hepatic malignancies

^{166}Ho -PLLA microspheres were developed at the University Medical Center Utrecht, the Netherlands in the '90, for the intra-arterial treatment of primary or metastatic liver malignancies. Besides its beta-particle emission, it emits gamma photons, thus simultaneously allowing high resolution single photon emission computed tomography (SPECT). Deployed as a 'theranostic'; the particles not only serve as a therapeutic, but also have an important addition, namely pre-treatment simulation to ensure patient safety. The 'multipurpose' particles have run through a developmental pipeline, and after two decades have now become widely available in Europe for regular clinical care. This lecture will provide some insights into this pipeline, focusing on important clinical research, getting it where it currently stands.