12-02-14

SNMMI Abstract

A Novel Sn-117m Colloid for Radiosynovectomy

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ABSTRACT BODY:

Objectives: The high-LET conversion electron (C.E.) emitter Sn-117m (t½ 14d, γ 159 keV, 86%) shows promise for colloidal radiosynovectomy. Radiosynovectomy is usually employed for inflammatory joint disease when systemic therapy has failed, to modify the disease. We are reporting a novel Sn-117m colloidal product that is being tested for its therapeutic effects in animal models of inflammatory arthritis.

Methods: Sn-117m C.E. are mono-energetic with a discreet range of about 290 μm. The therapeutic advantage to deposit energy in the synovial wall with minimal or no effect to surrounding tissue is advantageous. The colloidal tin-117m when injected into the joint remains there long enough to reduce the number of inflammatory cells. We utilized two well characterized rat models of arthritis: 1. Collagen induced rheumatoid arthritis, and 2. Osteoarthritis induced by creating joint laxity and instability.

Results: Joint retention of the colloid was typically >99.0% throughout the study. Microscopic evaluation of the cartilage and synovium within XX days of radiocolloid administration revealed the expected acute inflammatory effects with Sn-117m colloid administered at several radioactive doses.

Conclusions: These results demonstrate Sn-117m delivered intra-articularly remains in the joint space and induces the anticipated acute effects. Chronic studies are underway to characterize the anticipated decrease in joint inflammation by 90 days after radiocolloid administration.