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Therapeutic efficacy of ^{188}Re-human serum albumin microspherein GP7TB hepatoma model via intraarterial route

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Abstract

The aim of this study was to investigate the therapeutic efficacy of intraarterially administrated ^{188}Re-human serum albumin microsphere (^{188}Re-HSAM) in the GP7TB hepatoma model.Male F344 rats were intrahepatic inoculation with GP7TB 1 mm^3 cubes. These studies were performed on rat at 26 d after tumor inoculation. The efficacy of ^{188}Re-HSAM was performed by a single-dose treatment in GP7TB hepatoma rat via intraarterial route. Rats were checked for survival every day until death. The body weight was measured once a week.In efficacy study, the median survival time for the rat (n = 3), which received normal saline was 80 d. The median survival times for the mice treated with 10 mCi(n = 3), 4.8 mCi (n = 3) and 2.9mCi(n = 3) of ^{188}Re-HSAM were 130 d (P = 0.003), 90.25 d (P = 0.035) and 83.5 d (P = 0.617), respectively. The increase in life span of 10 mCi, 4.8 mCi and 2.9mCi of ^{188}Re-HSAM were62.5%, 12.8% and 4.4%, respectively. The therapeutic studies of ^{188}Re-HSAMdemonstrated better survival time and therapeutic efficacy for ratwith increaseddosein the GP7TB hepatoma model.These results suggested that intraarterial administration of ^{188}Re-HSAM could provide a benefit and promising strategy for delivery of radiotherapeutics in oncology applications.

Abstract

Liang-Cheng Chen is the Assistant Researcher of Isotope Application Division in Institute of Nuclear Energy Research. His major work is to investigate the preclinical animal study for drug efficacy, pharmacokinetics, dosimetry, molecular imaging and toxicology.