

Is Renal Toxicity From Y-90 DOTATOC Dependent Upon Dose per PRRT Treatment?

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Background: Phase I and II trials have demonstrated that the dose limiting organ for Y-90 DOTATOC is the kidney.

Aim: To compare renal toxicity of Y-90 DOTATOC based upon dose per PRRT treatment.

Methods: 165 cases from the UI NET database were analyzed and creatinine levels were followed post PRRT treatments. Subjects were divided into 2 groups: Those who received Y-90 DOTATOC dose of ≤ 120 mCi for >2 treatments ($n=29$) and those who received dose of more than 120 mCi for ≤ 2 treatments ($n=35$). Follow up creatinine levels were divided into 3 intervals: < 3 months (m), 3-12 m and > 12 m after the last Y-90 DOTATOC treatment.

Results: From the generalized linear model analysis, there was a significant treatment time interaction ($p=0.015$). This was due to the high dose treatment having a significant increase in % of toxicity over time (13.3% at 3 m to 60.1% at >12 m, $p=0.002$). The low dose treatment showed no significant difference in toxicity over time ($p>0.99$). However, comparison between the two treatment groups at each f/u interval showed no significant difference. The largest difference between treatment doses was seen at >12 months (32.3% vs 60.1%, $p=0.138$). Both groups received amino acid solution containing arginine/lysine with each treatment.

Conclusion: Reducing the dose of Y-90 DOTATOC per PRRT treatment decreases long-term chronic renal insufficiency in patients undergoing PRRT with this analog.

