1- Phase 3 Trial of 177Lu-Dotatate for Midgut Neuroendocrine Tumours

http://www.nejm.org/doi/full/10.1056/NEJMoa1607427

Patients with advanced midgut neuroendocrine tumors who have had disease progression during first-line somatostatin analogue therapy have limited therapeutic options. This randomized, controlled trial evaluated the efficacy and safety of lutetium-177 (177Lu)–Dotatate in patients with advanced, progressive, somatostatin-receptor–positive midgut neuroendocrine tumors.

At the data-cutoff date for the primary analysis, the estimated rate of progression-free survival at month 20 was 65.2% (95% confidence interval [CI], 50.0 to 76.8) in the 177Lu-Dotatate group and 10.8% (95% CI, 3.5 to 23.0) in the control group. The response rate was 18% in the 177Lu-Dotatate group versus 3% in the control group ($P<0.001$). In the planned interim analysis of overall survival, 14 deaths occurred in the 177Lu-Dotatate group and 26 in the control group ($P=0.004$). Grade 3 or 4 neutropenia, thrombocytopenia, and lymphopenia occurred in 1%, 2%, and 9%, respectively, of patients in the 177Lu-Dotatate group as compared with no patients in the control group, with no evidence of renal toxic effects during the observed time frame.

Treatment with 177Lu-Dotatate resulted in markedly longer progression-free survival and a significantly higher response rate than high-dose octreotide LAR among patients with advanced midgut neuroendocrine tumors. Preliminary evidence of an overall survival benefit was seen in an interim analysis; confirmation will be required in the planned final analysis. Clinically significant myelosuppression occurred in less than 10% of patients in the 177Lu-Dotatate group.