C-29

Improved Survival in 211 Patients with Stage IV Pulmonary and Gastroenteropancreatic mIBG Positive Neuroendocrine Tumors Treated with I-131 mIBG when Receiving Multiple Treatment Sessions or Demonstrating Imaging, Biochemical, or Symptomatic Response

Salvador Borges-Neto[1]; *Matthew Thorppe[1]; Ari Kane[1]; Terrence Wong[1]; Michael Morse[1]*

[1]Duke University

BACKGROUND: This retrospective analysis identifies predictors of survival in a cohort of patients with mIBG positive stage IV pulmonary and gastroenteropancreatic neuroendocrine tumor (P/GEP-NET) treated with I-131 mIBG therapy, in order to inform treatment selection and post-treatment monitoring.

METHODS: Survival, symptoms, imaging, and biochemical response were extracted via chart review from n=211 P/GEP-NET patients treated with mIBG between 1991-2014.For patients with CT follow up (n=125), imaging response was assessed by RECIST 1.1 where images were available (n=76) or by chart review of the radiology report where images could not be reviewed (n=49). Kaplan Meier analysis and Cox multivariate regression estimated survival and progression free survival benefits predicted by initial imaging, biochemical and symptomatic response.

RESULTS: All patients had stage IV disease at time of treatment. Median survival was 29 months from time of treatment. 71% of patients demonstrated symptomatic response with median duration of symptomatic relief of 12 months. Symptomatic response at first follow-up predicted a survival benefit of 30 months($p<0.001$). Biochemical response at first clinical follow up was seen in 34%ofpatients with stability of labs in 48%; response/stability vs. progression extended survival 40 months ($p<0.03$). Imaging response (20% of patients) or stability(60%) at initial 3 month follow up imaging extended survival 32 months($p<0.001$). Additionally, multiple mIBG treatments was associated with 24 months additional survival ($p<0.05$).

CONCLUSION: Therapeutic I-131-mIBG for metastatic pulmonary or gastroenteropancreatic neuroendocrine tumors appears to be an effective means of symptom palliation. Imaging, biochemical, and symptomatic follow-up each help prognosticate expected survival following mIBG therapy. Multiple rounds of mIBG are associated with prolonged survival; it is unclear whether this represents cause or effect.