Introduction:

- Hepatic arterial embolization (HAE) is a standard treatment option for liver-predominant metastatic NETs.
- NETs are highly vascular and express both VEGF and VEGFR.
- We hypothesize that administration of Sunitinib, a VEGF inhibitor, following hepatic arterial embolization will delay tumor vascularity and extend progression-free survival.

Methods:

- Patients with metastatic NETs to the liver underwent a series of selective arterial embolizations followed by Sunitinib (weekly after each embolization and continued until disease progression or up to a maximum of 3 cycles). Radiographic response rates were evaluated according to RECIST criteria. PFS and OS were calculated using Kaplan-Meier methodology.
- Serum VEGF levels were drawn before and after the first embolization.

Results:

- 30 patients were enrolled. Primary tumor sites included the small intestine (26), pancreas (5), rectum (2), lung (1) and unknown (1). The initial starting dose of sunitinib was 50 mg; however, due to poor tolerance, the starting dose was reduced to 37.5 mg. Twenty-eight patients (93%) had a partial radiographic response (PR), eight patients (26%) had stable disease, and three patients (9%) had progressive disease as best response. Median PFS was 18 months, and the rate of 1-year PFS was 72%. Serum VEGF levels increased by an average of 51 pg/ml (34%) after embolizations.

Conclusions:

- Hepatic artery embolization is a highly active treatment option for patients with metastatic NETs to the liver. Embolization stimulates release of VEGF into the circulation. Sunitinib, a VEGF inhibitor, can be safely administered following hepatic artery embolization at a daily dose of 37.5 mg.
- The high rates of PFS and OS associated with this sequence of therapies are encouraging.