

**Ochsner's Neuroendocrine Tumor Clinic**  
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We're on the Web! Visit us at [www.ochsner.org/nets](http://www.ochsner.org/nets)

Winter 2013

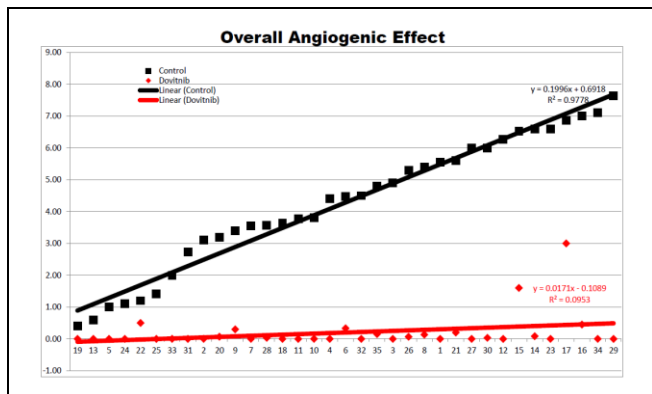
- J. Philip Boudreaux, MD, FACS • Richard Campeau, MD, FACNM • Virendra Joshi, MD, FACP, AGAF • Ryan Majoria, MD • Daniel Raines, MD • Robert Ramirez, DO • Yi-Zarn Wang, MD, DDS, FACS • Eugene Woltering, MD, FACS •



## From the Lab...

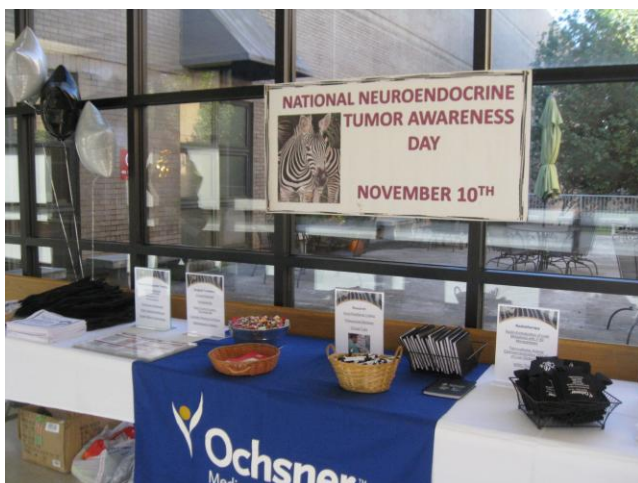
By: Dr. Eugene Woltering

In the previous newsletter we talked about the discovery that SSTR2 and FGFR3 were over expressed (up-regulated) in NET tumor tissue compared to normal, non-tissue. The next step is to determine the drugs that may affect these gene pathways and how this could translate into an anti-tumor effect. Dovitinib (TKI-258, Novartis, East Hanover, NJ) is a drug that has been shown to block the FGFR3 receptor. We recently tested 35 NET tissue samples with Dovitinib and a no drug control. As demonstrated by the graph (each red/black “pair” is equivalent to one patient), Dovitinib had an 82% decrease in anti-angiogenic effect compared to the untreated control. Second generation, more specific FGFR3- directed agents are currently being tested in our tumor model. Patients who have surgery at Ochsner-Medical Center Kenner will have their resected tumor tested against Dovitinib as well as other known anti-angiogenic compounds.



-ABOVE: Overall Angiogenic Effect of Dovitinib-

## Celebrating National Neuroendocrine Awareness Day at Ochsner Medical Center-Kenner November 10, 2012



## Recent Research from Our Clinic



### [Lymph Node Positivity in Patients with Small T1 and T2 Midgut Neuroendocrine Tumors](#)

By: Dr. J. Philip Boudreaux

Midgut (small bowel) neuroendocrine tumors (NETs)  $\leq 1$  cm (T1) are thought to have a low incidence (less than 15% chance) of positive nodes. T2 lesions (1.1–2 cm) have a 60% incidence of positive nodes. We hypothesize that in a referral practice, the incidence of lymph node positivity from small midgut primaries is much higher than what is seen in the community. Ninety-six patients with T1 and T2 primary tumors were evaluated based on their number of metastatic lymph nodes. The lymph node status was obtained from the pathology report of a patient's initial surgery. Twenty-nine patients had a primary size of  $\leq 1$  cm (T1), 18 of which (18/29, 62%), presented with nodal metastasis. For these 18 patients that were T1 with nodal metastases, 16/18 (88%) also presented with distant metastatic disease (most commonly metastatic to the liver). Sixty-seven patients had a primary tumor size between 1.1–2 cm (T2), 62 of which (62/67, 93%) presented with nodal metastasis. Based on our review, the incidence of lymph node positivity (62–93%) in small midgut NETs is much higher than what is generally accepted (less than 15%). We believe this may be related to an institutional bias, however, further multi-institutional studies are needed to determine the actual incidence of lymph node metastasis in patients with small midgut NETs.



### [Distribution of Bleeding Gastrointestinal Angioectasias in a Western Population](#)

By: Dr. Daniel Raines

In order to better direct therapy for angioectasias in the small bowel, their distribution needs to be better defined. Intestinal angioectasias are responsible for 5–6% of gastrointestinal bleeding cases. However, localization of these lesions can be challenging. Understanding the natural distribution pattern of these lesions in the GI tract is useful to guide endoscopic evaluation and therapy. A retrospective chart review was conducted to study the location of specific lesions in patients with gastrointestinal blood loss due to symptomatic angioectasias. A total of 127 charts were reviewed. Of these, 35 cases met the criteria and were included in this study. The number and location of angioectasias was documented. In this study, angioectasias were most commonly found in the jejunum (80%), followed by the duodenum (51%), stomach (22.8%), and right colon (11.4%). Only two patients were found to have angioectasias in the ileum (5.7%). No patients had angioectasias located in the esophagus or left colon. Twenty-one patients (60%) had angioectasias in more than one location. Patients being considered for endoscopic ablation of symptomatic angioectasias should undergo close inspection of the duodenum and jejunum using push enteroscopy or anterograde DAE combined with re-inspection of the right colon and terminal ileum. Small bowel angioectasias are a common cause of obscure gastrointestinal bleeding in patients with NETs. In addition, early NETs of the small bowel may be discovered serendipitously during evaluation and management of bleeding angioectasias of the small bowel. This new research adds to our understanding of intestinal angioectasias in patients with NETs as well as the general population.

## Recent Presentations



### [Pancreatic Neuroendocrine Tumor \(pNET\) Survival Data](#)

Presented at Ochsner Health System's Gastrointestinal Cancer and Therapeutic Endoscopy Symposia

By: Dr. John Cole

In November, Ochsner Medical Center hosted a Gastrointestinal Symposia, and Dr. Cole was invited to present on Neuroendocrine Tumors of the pancreas. Dr. Cole presented some survival data based on our experience in the clinic with pNETs. One-hundred and twenty-two pNETs that were seen at our clinic were analyzed. The majority of these patients (92) had distant metastatic disease to the liver. Of these 92 patients, 67 patients had nonfunctional tumors and 25 patients had functional tumors (the most prevalent of which was glucagonoma (n=9) followed by gastrinoma (n=5)). The median survival for all 92 patients with distant disease was 113 months. This compares favorably with SEER's published median survival for pNETs of 17 months. Survival was analyzed based on a number of factors. Females had a better survival rate than males (p=0.038). Females median survival was 216 months, males median survival was 71 months. There was not a statistically significant survival difference between functional and nonfunctional tumors (median survival 122 months versus 113 months, respectively). Patients that had their pNET resected had better survival rates versus those that did not undergo any surgeries (p=0.0058). Patients with their pNETs resected had a median survival of 113 months, patients with no pNET related surgeries had a median survival of 36 months.

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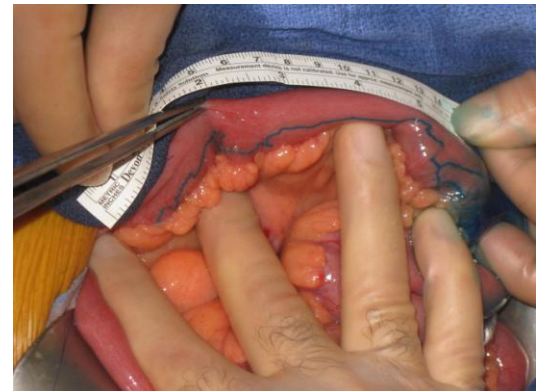


### [Radio-Guided Surgery and Lymphatic Mapping for Midgut Neuroendocrine Tumors](#)

Video Presentation at American College of Surgeons Annual Meeting

By: Dr. Yi-Zarn Wang

In October, Dr. Wang was invited to present novel surgical techniques for midgut NETs at The American College of Surgeon's Annual Clinical Congress in Chicago, IL. This meeting is one of the largest international meetings of surgeons in the world, and the American College of Surgeons recently celebrated their 100 year anniversary. Dr. Wang gave a unique presentation in which he incorporated powerpoint slides and video footage of his techniques. Radio-guided surgery (RGS) is an important tool to direct the cytoreduction of NETs. A radioisotope that is picked up by tumor metastases is injected pre-operatively then, intraoperatively, a hand-held neoprobe® is used. The neoprobe will then beep when it comes across a tumor that has taken-up the radioisotope. With lymphatic mapping, a blue dye is injected into the tumor intraoperatively. The blue dye will then travel through the tumor's lymphatic drainage pathways. The use of this technique allows for adequate resection margins and assists in preservation of the ileocecal valve in patients with terminal ileal carcinoids. An example of this technique is pictured to the right.



## Drug Trials– A Warning

October's Issue of Clinical Oncology News published an article entitled "Drug Trials: Often Long on Hype, Short on Gains". This article detailed the somewhat misleading way clinical drug trial results can be presented. The term "significant" should be accompanied by "statistically"– although this is not always the case. Without the "statistically", results are open to interpretation. What we need to look at is: are the gains derived "statistically significant" but not in reality, an actual gain for the patient. An increased survival of six weeks could be accurately portrayed as a "significant increase in survival". While this may be statistically significant, when the statistically is dropped---is this really significant? These claims of a "significant increase in survival" can be misleading to a patient looking for anything to try that could increase their survival. Of course, to a patient with metastatic cancer, a six week increase in survival is an increase none-the-less... but at what cost? There are toxicities and side-effects associated with any treatment. Furthermore, an average increased six week survival doesn't mean that every patient that participates will live an extra six weeks– some will live more, some will live less. Some will respond to the treatment, some will not. Expectations for many patients are high when it comes to clinical trials; but the potential side effects, post-treatment quality of life and cost need to be weighed against any potential benefit that a trial may have.

Summary of: Shaw, G. Drug Trials: Often Long on Hype, Short on Gains. Clinical Oncology News. 2012, 7(10).

[Read the full article here:](#)

[http://www.clinicaloncology.com/ViewArticle.aspx?d=Solid+Tumors&d\\_id=148&i=October+2012&i\\_id=902&a\\_id=21989](http://www.clinicaloncology.com/ViewArticle.aspx?d=Solid+Tumors&d_id=148&i=October+2012&i_id=902&a_id=21989)



### Clinical Trials

By: Dr. Richard Campeau

#### **<sup>177</sup>Lu DOTA-TATE: Peptide Receptor Radionuclide Therapy (PRRT)**

*Study screening now in progress*

*Anticipated enrollment initiation in April*

We are awaiting dual IRB approval from both Louisiana State University and Ochsner Medical Center. We are anticipating enrollment to begin sometime in April. If you are interested in participating please call the clinic at (504)–464–8500, and ask to speak to Maria Chester, RN.

In October, Dr. Campeau attended a novel seminar hosted by Harvard Medical School entitled "Molecular Imaging–Preclinical and Clinical Advances". This seminar presented the physics, chemistry, and engineering foundation of molecular imaging, and presented state-of-the-art developments in preclinical imaging, clinical translation, and clinical utilization in topics such as: SPECT/CT, SPECT/MRI, PET/CT, PET/MRI, etc. In January, Dr. Campeau will be presenting at the Society of Nuclear Medicine Mid-Winter Meeting on "Assessing the Normal Heart/Mediastinal <sup>123</sup>I *meta*-Iodobenzylguanidine (MIBG) Ratios in Neuroendocrine Tumor Patients without Cardiac Disease". Dr. Campeau determined that normal heart/mediastinal (H/M) <sup>123</sup>I MIBG ratios can be obtained as early as 1 hour post MIBG injections. Traditionally, a 4 hour post <sup>123</sup>I MIBG injection H/M ratio has been utilized. This discovery will greatly help to increase laboratory efficiency and patient acceptance of this important prognostic test.





## Nutrition Corner:

### Adjusting Lifestyles

By: Leigh-Anne Burns

Cancer patients often search for foods and supplements to improve their survival outcomes and quality of life. To address these issues the American Cancer Society formed a group of specialists in these areas to discuss and provide recommendations, which are published in *CA: A Cancer Journal for Clinicians*. Nutrition and activity for patients with NETs can be very challenging and often varies for each patient. Therefore, these recommendations may be altered to improve treatment such as stopping involuntary weight loss, malabsorption, etc... A registered dietician can identify and suggest diet alterations such as changes in food types and preparation to improve symptoms of nausea, vomiting, diarrhea and fatigue while maintaining a nutrient rich diet. Sample recipe below limits FODMAPs, and is beneficial for patients suffering from IBS-like symptoms.

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## Lemon Herb Tilapia

Yield: 4 servings

*1 small lemon*

*1/8 t black pepper*

*3 T extra-virgin olive oil (separate)*

*1/4 C chopped green onions*

*1 T fresh chopped parsley*

*1 1/2 lbs tilapia (or other white fish)*

-Preheat oven to 400°F

-Zest and juice lemon

-In a small bowl, combine zest, juice, two tablespoons of olive oil, parsley, pepper, and green onions

-Coat a baking sheet with one tablespoon of olive oil. Place fillets on baking sheet and top with herb mixture

-Bake for 15 minutes or until fish is cooked and flakes easily

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## Interesting Fact



In patients with carcinoid syndrome: flushing is the most prevalent symptom, occurring 94% of the time; diarrhea is second, occurring 78% of the time.

Creutzfeldt W. World J Surg. 1996; 20(2): 126-131.

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## Mark your calendars...

Carcinoid Cancer Awareness Network Regional NET Patient Conference

New York City; Saturday, April 6, 2013.

Visit [www.carcinoidawareness.org](http://www.carcinoidawareness.org) for more information.

Louisiana Carcinoid/NET Patient Support Group

Ochsner Medical Center-Kenner; Last Sunday of the month in January and June (3pm)

Contact [Louisiana.nets@gmail.com](mailto:Louisiana.nets@gmail.com) for meeting dates and times or with any questions.