

# GENDER CONSIDERATIONS IN THE TREATMENT OF NEN PATIENTS

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# Overall

- **There are gender differences across types of NEN in respect to frequency, and clinical presentation**

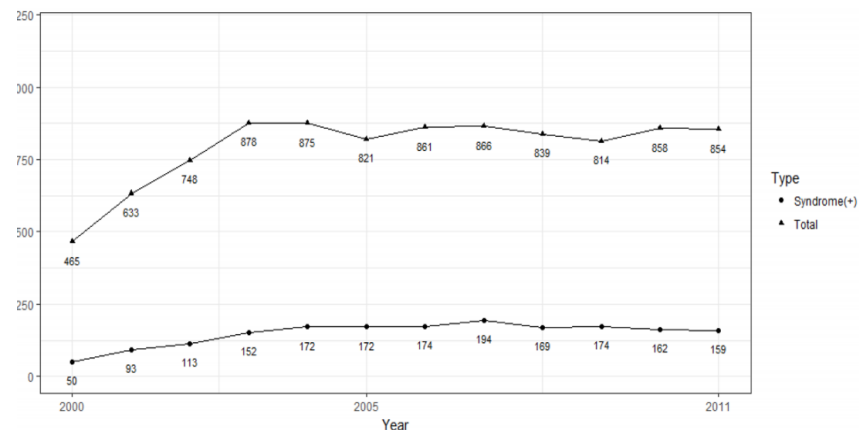
**Ex.**

- **midgut NETs occur more commonly among women**
- **Small cell lung cancer, an aggressive type of NEN, is seen mostly in men (tobacco)**
- **AC Camargo study (N=456): 55% of overall GEPNET is women**

# Frequency of carcinoid syndrome

- US database of 9,512 patients (65+yo)
- 18.8% had Carcinoid syndrome
- Risk factors: female gender, mets, well diff, midgut

Incidence NET with/without CS

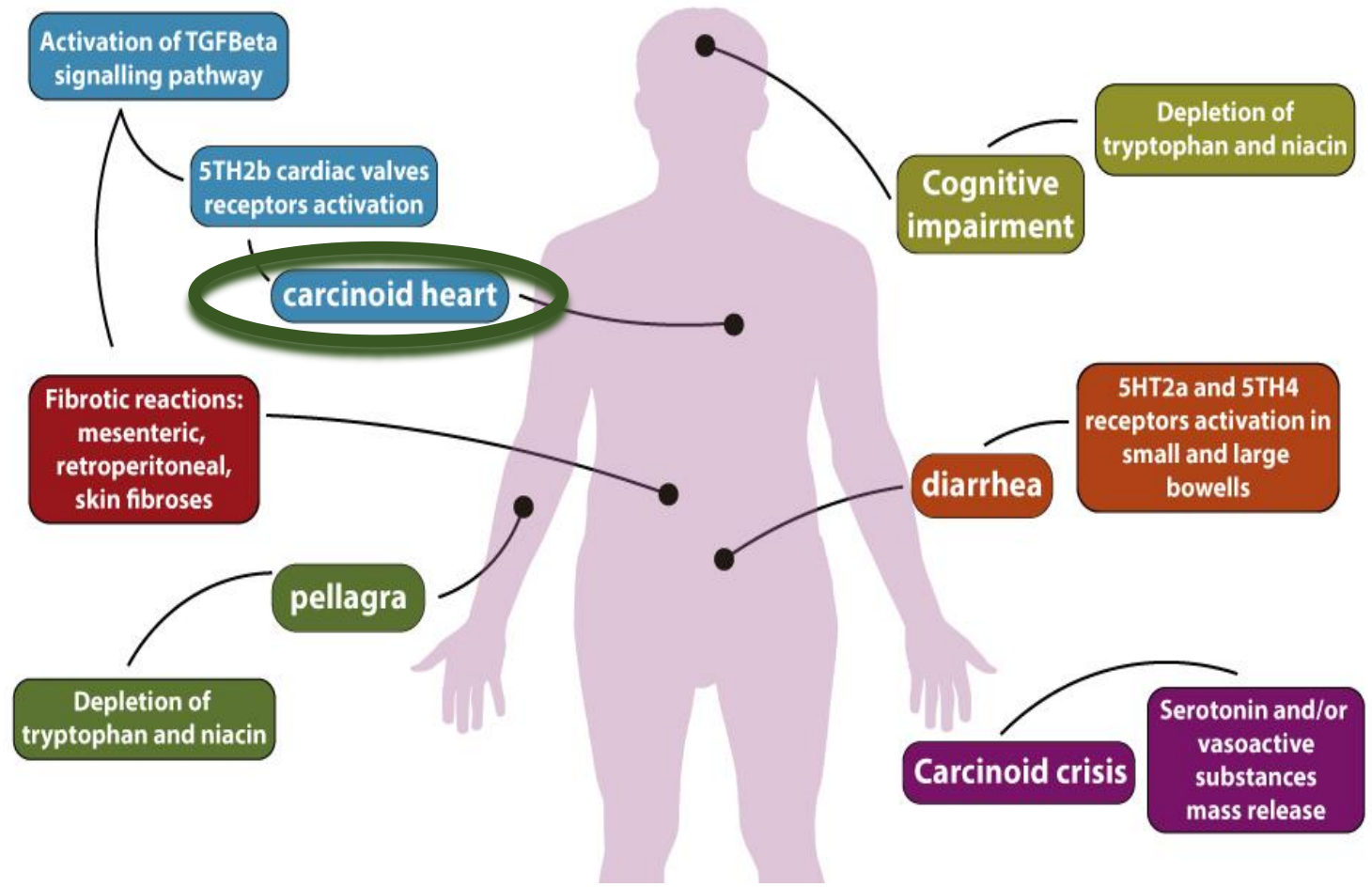


# Carcinoid Syndrome



*In women of 45 to 55 yo,  
carcinoid symptoms may  
be misdiagnosed as  
menopause*

# Complications from carcinoid syndrome



# **Complications from Carcinoid Syndrome: carcinoid heart**

- **Severe complications that may lead to cardiac insufficiency due to damage of heart valves**
- **Associated with poor control of carcinoid syndrome (usually long-term)**
- **Not associated with gender**

# **Gender aspects in NEN Treatments**

# Sexual Hormones in NEN

- **In a study conducted by our group, 35% of cases presented positivity for some hormonal receptors (binding proteins) in tumor tissues, either estrogen (ER) or progesterone (PR) receptors.**
- **Implications for Hormone Replacement Therapy/ Oral contraceptives?**



# Sexual Hormones in NEN

- Tamoxifen is an oral drug widely used for breast cancer that targets ER.
- Tamoxifen is cheap, safe and easily accessible

**HORMONET: Phase II study of hormone therapy with tamoxifen in patients with well differentiated neuroendocrine tumors and hormone receptor positive expression (NCT 03870399)**

# Particularities in treatments of NEN according to gender

Treatment	Efficacy according to gender is different?	Adverse events different between genders?
SOMATOSTATIN ANALOGUES	NO	POSSIBLY
EVEROLIMUS	NO	POSSIBLY
SUNITINIB	NO	POSSIBLY
LUTETIUM <sup>177</sup>	NO	NO
CHEMOTHERAPY (Ex. CAPTEM)	NO	NO
HEPATIC EMBOLIZATION	NO	NO

# **Somatostatin Analogues (SSA) and gender**

- **Women are more prone to gallbladder stones**
- **SSA increase the risk of gallbladder stones**
- **Monitoring is advised**

# Everolimus

- **Everolimus-induced stomatitis is more common among women**
- **Women more commonly have a “sweet tooth” (risk of hyperglycemia)**
- **Monitoring is advised**

# Sunitinib

- **Men tend to have more cardiovascular comorbidities (hypertension, coronary insufficiency)**
- **Sunitinib may induce hypertension and renal damage**
- **Monitoring is advised**

# Overall Interpretations about gender as an influencer on NEN treatments

- Overall, the patient clinical scenario, not the gender, dictates the treatment
- The choice of treatment takes into consideration patients' age, comorbid conditions, clinical status, type of NEN, stage, preferences and access.
- *Gender is not the main factor*
- The role of sex hormones on the biological behaviour of NEN remains to be studied



**OBRIGADA!!  
THANK YOU!!  
TODA RABA!!**

