



# 12° Congresso nazionale AME – 6th Joint Meeting with AACE Update in Endocrinologia Clinica



Bari,  
7-10 novembre 2013

## **Tiroide e scompenso cardiaco**

### **Take Home Messages**

**Vincenzo Triggiani**

*Endocrinologia e Malattie Metaboliche*

*Dipartimento Interdisciplinare di Medicina*

*Università degli Studi di Bari “A. Moro”*



Bari,  
7-10 novembre 2013

- **CHF** is an **enormous problem of public health**, with a heavy impact on health, quality and duration of life and costs
- **Comorbidities** can deeply influence the prognosis of HF
- **Hypo- and Hyperthyroidism**, either in their **overt** or in their **subclinical forms**, can lead to the onset and progression of HF

- Patients with **untreated overt thyroid dysfunction** are at **increased risk of HF**
- **Persistent subclinical thyroid dysfunction** is associated with the **development of HF** in patients with serum **TSH<0.1 or >10 mIU/l**
- **Screening for TSH levels** for newly diagnosed HF cases as well as for all CHF patients should be routinely performed

# Hypothyroidism

- Negative impact on different CHD risk factors as well as on myocardial contractility and lusitropic properties and systemic vascular resistance, thus favouring **hemodynamic worsening**
- Besides hypothyroidism, a **low T3 status** (a strong predictor of all-cause and cardiovascular mortality) in the setting of **HF**, the induction of a “cardiac hypothyroidism” by **amiodarone**, and other frequent co-morbid conditions, such as **chronic renal failure** and **depression**, can interact each other, further impairing cardiac function and thyroid status itself.

- **Age-specific reference ranges for serum TSH** should be considered in order **to establish a diagnosis of sHT in older people**
- **Levothyroxine replacement therapy** aiming to restore euthyroidism, avoiding both over- and undertreatment, is able to revert many of the cardiovascular alterations due to hypothyroidism, **improving HF** in these patients
- It is **mandatory in overt hypothyroidism**, whereas its use **in sHT is still on debate**



Bari,  
7-10 novembre 2013

- The possible use of **T3 replacement therapy** in hypothyroidism and possibly in low T3 syndrome needs further studies and the development of new formulations
- New **thyroid hormones analogues**, devoid of any TR-alpha mediated TH effects and well tolerated, could be developed in the next future to treat HF patients, given the analogy of HF phenotype and hypothyroid phenotype

# Hyperthyroidism



Bari,  
7-10 novembre 2013

- **Hyperthyroid patients** can show signs and symptoms of heart failure that are due to the hyperdynamic circulatory state (inappropriately called “**high output HF**”) and/or to the frequent **pulmonary arterial hypertension**. This clinical status tends to improve with the restoration of euthyroidism, but, if left untreated, can worsen over the time leading to a “true” HF

- The **“true” HF** in hyperthyroid patients, characterized by a **low cardiac output** (in line with the definition of heart failure itself) is rare, being described in about 6% of hyperthyroid patients, especially older individuals with a long history of untreated or not well compensated hyperthyroidism, often with a pre-existing cardiomyopathy, atrial fibrillation or marked tachycardia



- **Hyperthyroidism** can negatively influence patients with known heart failure, by the **worsening of a pre-existing ischemic cardiomyopathy**, by favouring the onset of **atrial fibrillation** or of **ventricular malignant arrhythmias**.  
Increased risk for **hemodynamic worsening**
- **Therapy** (thionamides, surgery and radioiodine, + betablockers) can **improve cardiac function in overt hyperthyroid patients** with HF
- Longitudinal randomized-controlled interventional trials are needed to assess whether treatment of **sHyper** is effective as well



# Amiodarone



Bari,  
7-10 novembre 2013

- Amiodarone is **the only drug** considered **relatively safe** for treatment of supraventricular and ventricular arrhythmias in patients affected by CHF
- A relevant role in the pathogenesis of **hypothyroidism** can be played by amiodarone
- In patients with pre-existing CHF the main cause of hyperthyroidism is related to amiodarone administration and the occurrence of **amiodarone induced thyrotoxicosis** is associated with an increased cardiovascular morbidity and mortality



# Amiodarone



Bari,  
7-10 novembre 2013

- **Careful screening** of HF patients **for either hypo and hyperthyroidism before starting amiodarone and periodic monitoring** of thyroid function tests
- Identify and treat (**levothyroxine therapy**) those developing **hypothyroidism**
- In many cases there is **no need of amiodarone withdrawal**
- In case of **hyperthyroidism**, **Amiodarone should be stopped**, if the medical condition allows it, and then the **hyperthyroidism should be treated** with thionamides, cortosteroids and/or surgery depending on the type of AIT, the severity of thyrotoxicosis and the clinical conditions



Bari,  
7-10 novembre 2013

- **Endocrine, Metabolic & Immune Disorders-Drug Targets**  
**Volume 13, Number 1 , March 2013**

Download gratuito

<http://benthamscience.com/contents.php?in=108119&m=March&y=2013&id=ZnJlZQ==>