It is well known that heart failure is associated with oxidative stress (OS). Reactive oxygen species in fact influence sarcolemmal and mitochondrial ione channels, which are responsible for cardiomyocyte excitability and are important in myocardial remodeling after a myocardial infarction. The decrease of anabolic axes can have a role in the progression of the illness.

In order to evaluate the relationship between growth hormone deficiency (GHD) and indexes of OS, we have performed a dynamic GH evaluation and determined oxidized form of coenzyme Q$_{10}$ (CoQ$_{10}$) (component of mitochondrial respiratory chain also endowed with antioxidant properties) in a group of 12 patients (10 male e 2 female, age 49-73) affected by heart failure (NYHA II-III; EF<40%).

**Results**

- 5 out of 12 patients presented a **total GHD** (mean ± ES peak GH: 3.87 ± 2.73 ng/ml; IGF-1: 97.4 ± 9.8 ng/ml),
- 3 showed a **partial GHD** (mean ± ES peak GH: 8.98 ± 2.94 ng/ml; IGF-1: 143 ± 57.21 ng/ml),
- While 4 patients showed a **normal GH response** (mean±ES peak GH: 16.05 ± 0.88 ng/ml; IGF-1: 122.5 ± 24 ng/ml). (Fig.1)

CoQ$_{ox}$/CoQ$_{tot}$ ratio were significantly higher in GHD patients than in patients with normal GH, thus expressing an augmented oxidation of the molecule. (Fig.2)

**Conclusions**

These preliminary data indicate that GHD is associated to an increased OS in patients with heart failure and suggest that this hormonal alteration can have a role in the physiopathology of this condition.