Is Plasma Corin Level an Independent Predictor of Left Ventricular Systolic Dysfunction?

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Background:
Left ventricular systolic dysfunction (LVSD) is traditionally attributed to coronary and non-coronary origin. Natriureticpeptides (NPs) confer myocardial and vascular protective effects to reduce the injury inflicted by ischemic and non-ischemic insults, and is considered an important component of the neurohormonal activation during heart failure (HF).NPs are secreted as pro hormones that are cleaved into the active peptides by Corin enzyme. Reduced levels of Corin may impair cardiac protection despite high levels of plasma NPs.

Aims:
To examined if plasma Corin level is independent predictor of LVSD.

Methods:
A cross sectional study was conducted in the northern Israel, using community patients (Clalit Health Services) and subjects hospitalized or visiting Baruch Padeh Hospital. Theywere71 healthy individuals without risk factors or cardiac disease, mean age 52 ± 13.74,32males and 39 females, and 233 patients with LVSD (EF$\leq$40%), 74 with HF and 159 without HF(defined by Framingham Criteria for Congestive HF). The mean age of the LVSD patients was 69 ± 12.70, most of them were male (n=141). Demographic and clinical data were extracted from patients' medical files. Blood Corin and BNP levels were measured by ELISA. We used logistic regression model to identify variables that independently predict LVSD, focusing on Corin level, controlling for other covariates. Odd ratios (Ors) 95% confident intervals (CIs) were calculate.

Results:
Low Corin level (OR 0.040; 95%CI 0.002, 0.57), higher BNP (OR 1.01; 95%CI 1.01, 1.02), older age (OR 1.08; 95%CI 1.04, 1.12) and female gender (OR 13.60; 95%CI 5.59, 51.58), were significant predictors of LVSD.

Conclusion:
LVSD patients are characterized by low Corin level, indicating reduced myocardial protection during both ischemic and non-ischemic myocardial injury. Conducting cohort study is suggested to clarify temporal relationship in order to determine causality.