

## NEW CONTRIBUTIONS OF THE DISSERTATION

Dissertation title: **Study on galectin-3 in patients with heart failure**

Major: **Internal medicine**

Code: **9 72 01 07**

Name of PhD student: **BUI THI THANH HIEN**

Academic advisers: **A/Prof. HOANG ANH TIEN**

**DINH HIEU NHAN, MD, Ph.D**

Educational institution: **University of Medicine and Pharmacy, Hue University**

### 1. Scientific significance

The development of molecular biology era has introduced various biomarkers in assisting diagnosis and prognosis of heart failure. The most commonly used biomarkers are B-type natriuretic peptide (BNP), N-terminal pro-brain natriuretic peptide (NT-proBNP), hs-Troponin, sST2, and especially galectin-3 – a recent novel marker that have provided objective evidence for rapid and early diagnosis as well as prognosis in patients with heart failure. However, each of them still has certain limitations.

This is one of the first studies in Vietnam on the relationship between galectin-3 and heart failure. The study provides additional scientific evidence on diagnostic value of galectin-3 in patients with heart failure and its levels according to the severity of ejection fraction (EF); the correlation between galectin-3 concentration and parameters related to myocardial remodeling on echocardiography and serum BNP. In addition, the study also evaluated the association between galectin-3 and adverse cardiovascular events during hospital stay.

### 2. Practical significance

Findings of this research contribute to the assessment of serum galectin-3 levels in patients with and without heart failure in Vietnam and the association between galectin-3 and adverse cardiovascular events, left ventricular remodeling index on echocardiography and BNP in heart failure patients. Based on this research, galectin-3 can be employed as a possible clinical biomarker in early diagnosis, prognostication and risk stratification of heart failure patients, especially when combining with other indicators.

### 3. New contributions of the dissertation

This is one of the first studies in Vietnam on the diagnostic value of serum galectin-3 in subjects with heart failure and its subtypes. The diagnostic cut-off point of serum galectin-3 of  $>17.355$  ng/ml has provided high sensitivity and specificity. High levels of galectin-3 levels are showed to be related to higher NYHA class of heart failure. There is a relationship between serum galectin-3 levels and myocardial remodeling phenotypes on echocardiography. Its concentration at the time of admission was positively correlated with BNP. The study also illustrated an association between serum galectin-3 and adverse cardiovascular events during hospital stay.

**Academic adviser**

**A/Prof. Hoang Anh Tien**

Hue, 4<sup>th</sup> April 2022

**PhD Student**



**Bui Thi Thanh Hien**