Aims & Scope:

Conventional clinical guidelines of reputed medical societies do not provide universal recommendations about clinical implementations of cardiac biomarkers in heart failure (HF). Although natriuretic peptides are defined as most reliable biomarker in diagnosis, prediction, risk stratification among acute and chronic HF with reduced, mid-range and preserved ejection fraction, other biomarkers reflecting myocardial necrosis (cardiac troponins), inflammation (soluble suppression of tumorigenicity 2, galectin-3) appeared to be prognostic in heart failure with reduced ejection fraction, but less studied in HF with preserved and mid-range ejection fraction. In this context, discovering of new reliable non-invasive predictive biomarkers for any heart failure phenotypes appears to be promising. The issue will clarify discovering of new biomarker-based models that could be effective in prediction of HF major cardiovascular events. Comparison between old traditional biomarkers and new biomarkers (vascular endothelial growth factors, degradation collagen products, number and function of endothelial / mesenchymal progenitor cells, apoptotic cell-derived micro vesicles, fibroblast growth factor-23 / Klotho, growth differential factor-15, microRNAs-155, -133, -22, eNO-syntase gene polymorphism, galectin-3 gene polymorphism, beta-adrenoreceptor-gene polymorphism) has shown that they frequently exhibited variable sensitivity and specificity to be used widely in routine clinical practice with an aim to stratify patients at risk of heart failure and predict poor prognosis. The aim of the issues is to summarize knowledge about mechanisms, clinical interpretation, prognostic role, and future research regarding cardiac biomarkers in acute and chronic heart failure.

Keywords:

Heart failure; biomarkers; biomechanical stress; inflammation; fibrosis; endothelial dysfunction; diagnosis; risk stratification; prognostication

Subtopics:

The subtopics to be covered within this issue are listed below:

- Natriuretic peptides in diagnosis, stratification, and prediction in heart failure
- Biomarkers of fibrosis, inflammation, biomechanical stress in heart failure
- Biomarker-based risk stratification and prognostication in heart failure
- Biomarkers of kidney dysfunction in prognostication of clinical outcomes in heart failure
- Biomarkers of extracellular matrix regulation
- Circulating microvesicles and heart failure evolution
- Biomarkers of endothelial dysfunction
- Genetic and epigenetic biomarkers in prediction of heart failure developing
- Signature of microRNAs in heart failure
- Biomarker-based predictive models in various phenotypes of heart failure
- Comorbidities of heart failure and biomarker-based prognostication
- Promising biomarkers for individualized strategy of heart failure treatment
- Monitoring of treatment response in heart failure
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