

April 14, 2020

CLINICAL BIOCHEMISTRY

NT-proBNP Testing

Date effective: April 14, 2020

Background Information:

- NT-proBNP has a very high diagnostic accuracy in discriminating heart failure (HF) from other causes of dyspnea: the higher the value, the higher the likelihood that dyspnea is caused by HF.
- NT-proBNP testing can be considered for patient presenting with atraumatic dyspnea without obvious cause, where history, physical exam, CXR and POCUS are not diagnostic or not available.
- Offering of NT-proBNP in Manitoba was under review, the current implementation has been expedited to support strained resources during COVID-19. The availability of NT-proBNP will be reviewed again once the COVID-19 situation resolves.

Cautions:

- In patients with shock, NT-proBNP cannot be used to identify cause (e.g. cardiogenic vs. septic shock), but remain prognostic.
- NT-proBNP is a marker of myocardial stress, as such may be elevated among patients with severe respiratory illnesses typically in the absence of elevated filling pressures or clinical heart failure. Much like troponin, elevation of NT-proBNP is associated with an unfavorable course among patients with ARDS.
- Patients with COVID-19 often demonstrate significant elevation of NT-proBNP. The significance of this finding is uncertain and should not necessarily trigger an evaluation or treatment for heart failure unless there is clear clinical evidence for the diagnosis.
- NT-proBNP cannot identify the underlying cause of HF and, therefore, if elevated, must always be used in conjunction with cardiac imaging.
- NT-proBNP measurements should always be used in conjunction with all other clinical information.

Change in Test Procedure:

- NT-proBNP testing is now available in Manitoba for Hospital and Emergency Department patients.
- Can be ordered (write NBNP) on the laboratory requisition you currently use for ordering chemistry tests.
- Testing will be performed at HSC and SBH, but can be ordered from any hospital in Manitoba, results to be available within about an hour of the HSC or SBH laboratory receiving sample.
- Sample is plasma (Li-Heparin)

References/Resources:

- Canadian Cardiovascular Society http://ccs.ca/images/Images_2020/COVID_or_HF_RRT_doc_01Apr.pdf
- Ezekowitz JA, O'Meara E, McDonald MA, et al. 2017 Comprehensive update of the Canadian Cardiovascular Society Guidelines for the management of heart failure. *Can J Cardiol.* 2017;33(11):1342-1433.
- American College of Cardiology <https://www.acc.org/latest-in-cardiology/articles/2020/03/18/15/25/troponin-and-bnp-use-in-covid19>

Authorship/Endorsements:

Dr. Colette Seifer MB (Hons), FRCP (UK), Professor, University of Manitoba, Medical Director, Cardiology, Associate Medical Director, WRHA Cardiac Sciences Program, Email: cmseifer@sbgh.mb.ca

Dr. Laurel Thorlacius PhD. FCACB, Medical Director, Clinical Biochemistry, Diagnostic Services, Share Health
Email: lthorlacius@sharedhealthmb.ca