Date: May 4, 2020

CLINICAL BIOCHEMISTRY

Ceruloplasmin – change in methodology

Date effective: May 11, 2020

Background Information:

- Ceruloplasmin is used primarily, with blood and 24-hour urine copper tests, to help diagnose Wilson's disease. It can also be ordered periodically to evaluate effectiveness of treatment.
- Rarely, ceruloplasmin may be ordered to help diagnose abnormalities in copper metabolism, copper deficiencies, or the rare inherited disorder named Menkes disease.
- Low ceruloplasmin levels are found in liver disease, intestinal malabsorption, malnutrition and nephrotic syndrome, but its use is not indicated in assessment of these conditions.
- Ceruloplasmin is an acute phase reactant and it may be increased with inflammation, severe infection, malignancy as well as during pregnancy, with oral contraceptive use and hormone replacement therapy, which can all affect interpretation of the test and the ability to recognize Wilson's disease.

Change in Test Procedure:

- The Shared Health Diagnostic Services is switching from the laboratory-developed method measuring enzymatic activity to an immunoassay that measures the amount of ceruloplasmin.
- Due to the change in analytical methodology reference intervals will be updated accordingly. Results will now be better aligned with other laboratories as immunoassay is the preferred methodology.
- The new method runs 30% lower than the previous method for results above 0.2 g/L

References/Resources:

- *Tietz Textbook of Clinical Chemistry and Molecular Diagnostics, Sixth Edition*
- *Saroli Palumbo C, Schilsky ML. Clinical practice guidelines in Wilson disease. Ann Transl Med 2019; 7(Suppl 2):S65*
- *Ryan A, Nevitt SJ, Tuohy O, Cook P. Biomarkers for diagnosis of Wilson's disease. Cochrane Database of Systematic Reviews. 2019, Issue 11. Art. No.: CD012267. DOI: 10.1002/14651858.CD012267.pub2*

System Improvements:

- The fully automated method will substantially decrease the turnaround time (TAT) allowing for reporting results the same day specimens are received in the laboratory.
- The test will be available 24/7.
- The new immunoassay method is Health Canada approved for its intended use.

More Information:
https://apps.sbgh.mb.ca/labmanual/test/view?seedId=4003

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