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Memo No. 2019-003
Date: 18-Jan-2019
Memo To: Clients
Re: **Notice – Copeptin as Surrogate Measure of ADH**

- **Copeptin analysis will soon be available at London Health Sciences Centre (LHSC). Copeptin is a surrogate measure of anti-diuretic hormone (ADH). LHSC will concurrently remove ADH from their test menu.**
- **With the discontinuation of ADH analysis at LHSC, ICL will offer ADH analysis performed at a lab to be determined soon. Test details for this new ADH service will be available soon.**
- **These changes take effect for specimens received at ICL on Monday, March 4, 2019. Copeptin specimens will be referred to LHSC and ADH to the selected new testing lab.**
- **Please advise your clinicians and clients about this change to ensure that they order appropriately. The advantages of ordering copeptin as a surrogate for ADH are numerous:**
  https://www.copeptin.com/about-copeptin/advantages-of-copeptin-measurement.html
  https://www.nature.com/articles/nrendo.2015.224

Copeptin and ADH are derived from the same precursor protein. Therefore, they are produced in a 1:1 ratio and correlate significantly. There are several advantages of measuring copeptin over ADH.

- **Better *ex vivo* stability:** Copeptin is stable even at room temperature for several days. On the other hand, samples for ADH must be collected in pre-chilled tubes and spun in a refrigerated centrifuge. ADH is quite unstable, even when frozen.
- **Better correlation with osmolality:** Copeptin correlates better than ADH with plasma osmolality.
- **Health Canada approval:** The BRAHMS Kryptor copeptin assay is expected to have Health Canada approval for IVD use in early 2019; the ADH assay is for research use only. We will inform you if a delay in Health Canada approval delays implementation of copeptin service.
- **More precise:** Copeptin is measured by an automated immunoassay whereas ADH is analyzed by a manual radioimmunoassay (RIA). As such, the copeptin assay has much better precision.
- **Smaller sample volume:** The sample volume required for copeptin measurement is only 500 µL. The ADH assay involves an extraction step and therefore requires a relatively large sample volume. Often, samples are received with insufficient volume for the initial ADH analysis or for repeat analysis if acceptable agreement between duplicates is not obtained.
- **Improved turn-around time (TAT):** The copeptin assay is an automated immunoassay that will be run weekly. The ADH RIA is relatively labour-intensive, requiring 3 days to perform and is only run every other week. Repeat analysis requires an additional 2 weeks for ADH.

Want to receive updates by e-mail? Please contact Client Care info@ICLabs.ca

Copeptin Test Details

Specimen: Plasma (Li-heparin) 500 µL; Pediatric 250 µL. Store and send frozen. **Please note the requirement for Li-heparin plasma; EDTA plasma was required for the previous ADH assay.**

Method: Immunoassay (Kit: BRAHMS Copeptin proAVP KRYPTOR; Analyzer: Kryptor Compact Plus)

Reference Values: Based on measured osmolality and copeptin

Li-Heparin Plasma Osmolality (mmol/kg)	Copeptin Reference Interval (pmol/L)
270 - 280	≤ 11.6
281 - 285	≤ 13.7
286 - 290	1.5 – 15.3
291 - 295	2.3 – 24.5
296 – 300	2.4 – 28.2

From Timper K et al., J Clin Endocrinol Metab 2015; 100(6):2268-2274:

- a baseline copeptin ≥ 21.4 pmol/L identified nephrogenic diabetes insipidus with 100% sensitivity and specificity
- following a fluid deprivation test, a copeptin level ≥ 4.9 pmol/L identified primary polydipsia and a copeptin level < 4.9 pmol/L identified complete or partial central diabetes insipidus, with 94-96% sensitivity and specificity

Price: The price (including osmolality measurement) will be equivalent to the present ADH assay.

ICL HL7 Setup Codes

(REF Code)	(RES Codes)	
Order Code: COPEPTIN	Result Code: 62878 OSMOLALITY	Units: mmol/kg
	Result Code: 62877 COPEPTIN	Units: pmol/L

If you have further questions, please contact Client Care at (416) 422-3000 Ext. 300 or info@ICLabs.ca

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