



CLINICAL PRACTICE CHANGE

Change to not reporting Corrected Calcium in Pediatric Patients

September 2015

Date Effective: Sep 8, 2015

Sites: WRHA, Rural RHAs, DSM Sites

Background Information:

Since approx. 40-50% of calcium is albumin-bound, measurement of total calcium is affected by changes in albumin levels. Calculation of albumin-adjusted or 'corrected calcium' (C-Ca) adjusts the measured calcium result to a reference albumin level of 40 g/L; C-Ca is an (convenient, but less than ideal) alternative to direct measurement of ionized (unbound) calcium, ICAL. While a number of related formulas exist in the literature for calculating C-Ca, the one below has been in long-term use locally.

$$\text{Corrected Ca} = \text{Measured Ca} + \left[\frac{0.2 \times (40 - \text{albumin g/L})}{10} \right]$$

Corrected calcium can be compared to the normal calcium range, derived from individuals with albumin of 40 g/L. Currently at Delphic LIS-connected DSM lab sites, albumin is added to all requests for total calcium for automatic calculation of the corrected calcium. Abnormal total calcium (corrected or uncorrected) results should be confirmed as required by direct ICAL determination.

Discontinuation of reporting of corrected calcium for pediatric patients:

Across the pediatric age range albumin levels can show wider variation, particularly in infants. In consequence, the agreement between a C-Ca and ICAL levels can often be poor, and/or misleading. In these circumstances, uncorrected calcium is often a better predictor of true calcium level, agreeing with ICAL. WRHA Pediatrics and DSM Clinical Biochemistry have therefore jointly reviewed this matter. As there is no literature or practice guidelines to support the use and reporting of corrected calcium in the pediatric patient population, the joint decision reached was to cease this historical practice.

Commencing September 8th 2015 the auto-calculation of corrected calcium will no longer occur and be reported on total calcium results in the patient age range of 0 – 18 years. Albumin will continue to be added to the calcium request to aid interpretation and manual calculation (if / when desired). The patient report will indicate for Corrected Calcium, "Not calculated for age <18 years."

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