



Educational Discussion: Procalcitonin

2017-A Procalcitonin Survey (PCT)

The 2017 PCT-A Survey comprised various challenges encompassing a continuation of the previously established analyte for this Survey. Moving forward, CAP will include a challenge at a low procalcitonin concentration highlighting the clinical relevance of these procalcitonin values. Procalcitonin is a hormone secreted mainly by thyroid C-cells to maintain calcium homeostasis. During scenarios of severe systemic inflammation, expression of procalcitonin may be de-regulated and secreted in large quantities by many tissues while the level of calcitonin remains unchanged. Following an infection's inflammatory stimulus, procalcitonin is detectable within relatively short time frames and parallels the severity of the inflammation. Clinically, procalcitonin may be indicative of a bacterial infection and/or sepsis and is used in some healthcare settings as an aid in antimicrobial stewardship. Changes at low procalcitonin concentrations become more relevant when assessing these clinical scenarios.

The data from this Survey indicates relatively good performance across methods. At higher procalcitonin levels, as shown in PCT-01 and PCT-03, it is interesting to note that there are differences between the method peer groups when comparing to each other as well as the all method mean. It is unknown whether these differences may be reflected in the established reference intervals for these methods, or if this difference represents a phenomenon related to the Survey material or differences in methodology. It is also interesting to note the differences when looking at the Siemens methodology, where in some cases the low and high value are approaching two times the low and high values for the other peer groups. Regardless, the mean procalcitonin values (where mean can be calculated) at a lower procalcitonin concentration, as observed with PCT-02, align more closely. The observed performance at lower procalcitonin levels is relevant as the CAP will begin to include a challenge at a low concentration moving forward.

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