


 Accredited to
 ISO 15189:2012

Procalcitonin

Synonyms

Clinical Indication

Procalcitonin (PCT) is a precursor for the hormone calcitonin. It is undetectable in the blood of healthy individuals. PCT is an indirect marker of infection released in response to pro-inflammatory stimuli in particular those of bacterial origin. PCT can be used to indicate severity of infection and likelihood of systemic infection or sepsis. PCT is useful in making a diagnosis of bacterial infection, which can cause sepsis, and to antibiotic treatment since PCT levels are usually low in people with viral infections.

PCT is detected in serum approximately 6 hours post infectious insult, peaking around 12-48 hours with a half-life around 20-35 hours. PCT levels fall once appropriate treatment has started indicating levels can be used to monitor treatment response and antimicrobial treatment.

PCT results should always be interpreted within the clinical context of patient and other findings.

PCT has been shown to be useful in the early detection of Covid 19 patients at low risk for bacterial co-infection and adverse outcomes. Covid 19 is a viral infection and the presence of high levels of PCT in Covid 19 could indicate bacterial co-infection and alert to high-risk patients. In addition, monitoring of PCT levels in Covid 19 patients will help early identification of secondary infection and progression to more severe states.

Part of Profile / See Also

Request Form

Combined Pathology manual request form or ICE request

Availability / Frequency of Analysis

Always available

Minimum retest interval of 48 hours

Turnaround Time

Same day

Patient Preparation

Sample Requirements

Specimen Type

Serum and Plasma.

Volume

1 mL

Acceptable Containers



Yellow top (SST) tube



Green top (lithium-heparin) tube



paediatric orange top (lithium-heparin)



paediatric green top (lithium-heparin)

Plain serum samples may also be used.

Reference Range & Units

Interferences

Severely haemolysed/icteric/lipaemic samples

Interpretation & Clinical

Decision Value (if applicable)

Procalcitonin is not 100% sensitive or specific for bacterial sepsis and therefore results should always be interpreted along with clinical context, and other laboratory investigations such as blood cultures and CRP.

Concentration	Interpretation
<0.25 µg/L	Negative. A negative result cannot exclude bacterial infection or sepsis.
0.25 - 2 µg/L	Positive. A positive result cannot confirm, in isolation, a diagnosis of infection or sepsis, especially in the context of a co-existing inflammatory state (major trauma, surgery and cardiogenic shock are all recognised causes of an elevated PCT).
>2.0 µg/L	Positive. Levels >2 µg/L are associated with a much higher risk of bacterial infection and sepsis. Antibiotic therapy encouraged as per the Trust guidelines

References

Procalcitonin kit insert.

B.R.A.H.M.S antibiotic guidance

Locally agreed ranges.

Test code

PCT

Lab Handling

Serum and plasma stable for 24 hours at 4°C.