

## VLERËSIMI I PROKALCITONINËS SI MARKUES I SEPSISIT NË PACIENTËT ADULT

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## Summary

## ESTIMATION OF PROCALCITONIN (PCT) AS A MARKER OF SEPSIS IN THE ADULT PATIENTS

Diagnosis of sepsis is difficult, particularly in patients where signs of sepsis may be present in the absence of a real infection. **Procalcitonin (PCT)** is an innovative and highly specific marker for the **diagnosis of bacterial infections and sepsis**. Procalcitonin supports early diagnosis and clinical decision making which could **direct an effective therapy**.

**Objection:** The study aimed was to assess the value of white blood cell count (WBC), C-reactive protein (CRP), PCT for the diagnosis of systemic inflammatory response syndrome (SIRS) and sepsis. In Albania, PCT has been used as a serum marker for bacterial sepsis since May, 2010.

**Methods.** We evaluated: WBC, CRP, and PCT in 110 patients presented in our hospital. We used Elycsys BRAHMS PCT test Electro Chemiluminescent Immunoassay (ECLIA) for the determination of Procalcitonin. We evaluate those parameters in three subgroups: 32 patients with sepsis, 60 patients with SIRS, and 18 patients as control group. The cut off for positivity was  $e^{-2}$  ng/ml.

**Results.** In sepsis subgroup mean age was 47.2 years old  $\pm 21.7$  SD. Average value of PCT, PCR and WBC were respectively 21.32ng/ml, 102.3ng/l and  $13.134 \times 10^3$  cells/mm<sup>3</sup>. In SIRS subgroups mean age was 41.9 years old with  $\pm 15.9$  SD and the average value of PCR, WBC were 74.3ng/l and  $11.137 \times 10^3$  cells/mm<sup>3</sup>, but PCT was  $d^{-2}$  ng/ml. In control group mean age was 44.3 years old with  $\pm 25.24$ SD, and WBC, PCR and PCT were in normal value respectively ( $3.5-10 \times 10^3$  cells/mm<sup>3</sup>), (0-5ng/l) and (0.5-2ng/ml).

**Conclusions.** The serum concentration of PCT is specifically elevated in sepsis patients. However, the evidence of it in infectious diseases is limited. The diagnostic model based on the laboratory parameters, using the combined predictors of PCT, CRP and WBC, can be a useful means for predicting early-onset of sepsis.

**Key word:** Sepsis, SIRS, procalcitonina,

Sepsisi është një sindrom mjaft serioz me një morbozitet dhe mortalitet akoma të lartë pamvarsisht terapisë specifike dhe suportive që aktualisht ekziston (1,2,3). Sepsisi është përkufizuar si përgjigje inflamatore sistemike e organizmit (SIRS) si pasojë e një shkaktari mikrobik. Ky përkufizim ka marrë

formën përfundimtare në konferencën konsensuale të vitit 1992 e organizuar nga ekspertë ndërkombëtarë të dy shoqatave të mëposhtme:

American College of Chest Physicians dhe Society of Critical Care Medicine (1).

Tabela nr.1. Përkufizimi i sepsit sipas konferencës së ACCP/SCCM në 1992

Evidentimi mikrobiologjik i shkaktarit infektiv ose klinikisht i dukshëm në prani të të paktën dy kritereve të SIRS-it
Temperaturë $>38^{\circ}\text{C}$ ose $<36^{\circ}\text{C}$
Frekuenca kardiake $>90$ rrahje/minut
Frekuenca respiratore $>20$ /minut ose $\text{PaCO}_2 <32$ mmHg
Leukocyte $>12000$ qel/ $\mu\text{L}$ ose $<4000$ qel/ $\mu\text{L}$