

POSTER PRESENTATION

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# Role of procalcitonin as an early marker in diagnosis and follow up of surgical site infection in Al Azhar University Hospital – New Damietta, Egypt

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## Introduction

Identifying patients with bacterial infection and sepsis is a major challenge in emergency departments and critical care units. Procalcitonin (PCT), the prohormone of calcitonin, was described as innovative parameter in early diagnosis of infection.

## Objectives

This work was carried out to evaluate the role of PCT as an early marker in diagnosis and follow up of patients with surgical site infection.

## Methods

The study was conducted on 50 patients admitted in the surgical departments of New Damietta, University Hospital, in the period between September 2012 and September 2013. Blood, urine and/or pus cultures were done. White blood cell (WBC) counts were determined using the automated hematology analyzer. Serum C-reactive protein (CRP) level was measured by the semi-quantitative latex agglutination test. Serum PCT concentrations were determined using the enzyme linked immunosorbent assay (ELISA).

## Results

Postoperative infections were found in 29 patients (58 %) with SSI in 11 (22 %), urinary tract infection (UTI) in 5 (10 %), blood stream infection (BSI) in 4 (8 %), SSI and BSI in 7 (14 %) and SSI and UTI in 2 (4 %) of these patients. *Staphylococcus aureus* & *coagulase negative Staphylococci* were the most frequently isolated pathogens, followed by *Escherichia coli*, *Pseudomonas aeruginosa*,

*Proteus mirabilis*, *Candida albicans*, *Salmonella Paratyphi B* and *Klebsiella pneumoniae*. Most of the isolated organisms were sensitive to *Imipenem*. Among the infected group, median serum levels of PCT and Temperature were higher ( $P < 0.001$ ) in the early phase (one day after operation, 1.20 ng/ml, 36.5 °C) more than preoperative phase (0.11 ng/ml, 37.7°C) and the late phase (5 days after operation: 0.46 ng/ml, 37.5 °C). Median serum levels of CRP and WBC were increased gradually ( $P < 0.001$ ) from the base line to the late phase (5.0 mg/l, 12.0 mg/l, 48.0 mg/l for CRP and 5.3 K/uL, 10.1K/uL, 11.2 K/uL for WBC, respectively).

## Conclusion

These data indicate that PCT is greatly helpful to distinguish an infection from an inflammation. Moreover, it plays a very important prognostic role in the early detection of patients at risk of infection in the post-operative period.

## Disclosure of interest

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