بسم الله الرحمن الرحيم

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بقسم التوثيق الإلكتروني بمركز الشبكات وتكنولوجيا المعلومات دون أدنى مسئولية عن محتوى هذه الرسالة.

ملاحظات : لا يوجد

Predictive value of serum copeptin as a severity marker of community-acquired pneumonia in pediatrics

Thesis

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Abstract

Background: Community-acquired pneumonia is the most severe form of acute respiratory infections, inflammatory markers are needed to asses severity and complications for better prognosis

Objectives: This study aimed to assess the level of serum copeptin as inflammatory marker in children with CAP compared to controls, and to assess the level of serum copeptin in complicated cases of CAP compared to uncomplicated ones.

Patients and Methods: A case-control study was conducted on 53 children with community acquired pneumonia and another 40 children as controls, they were further subdivided according to presence or absence of complications of pneumonia into complicated cases(27 patients) and non complicated cases (26 patients), admitted to Pediatric Hospital Ain shams University from January 2021 to the end of December 2021.Blood samples for copeptin and procalcitonin were drawn and sent for analysis. Imaging techniques as X-ray, computed topography and ultrasound were used to assess the diagnosis of pneumonia.

Results: Blood level of copeptin was statistically significant higher in pneumonia cases(median 65 pmol/L) compared to controls (median 0.65 pmol/L) (P-value <0.001).Blood level of copeptin was statistically significant higher in complicated pneumonia cases (n=27 patients, median 79 pmol/L) compared to uncomplicated cases (n=26 patients, median 37 pmol/L) (P-value< 0.001).Blood level of copeptin was statistically significant positively correlated with all pneumonia severity scores and to procalcitonin level. Sensitivity and Specificity of blood level of copeptin (sensitivity 81%, specificity 84%) were significantly higher than that of procalcitonin (sensitivity 62% and specificity 73%).

Conclusion: We conclude that serum copeptin might represent a new biomarker for predicting CAP related complications and severity among pediatric population.

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List of Abbreviations

Abb.	Full term
ABG	Arterial blood gases
ACTH	Adrenocorticotropic hormone
ADPKD	Autosomal dominant polycystic kidney disease
ALT	Alanine aminotransferase
AMI	Acute myocardial infarction
AST	Aspartate aminotransferase
AVP	Arginine vasopressin
BMI	Body mass index
Ca	Calcium
CA-MRSA	Community-associated methicillin-resistant Staphylococcus aureus
CAP	Community-acquired pneumonia
CF	Cystic fibrosis
COPD	Chronic obstructive pulmonary disease
COVID-19	Coronavirus disease-19
CPP	Copeptin
CRH	Corticotropin releasing hormone
CRP	C Reactive Protein
CT	Computed Tomography
CVID	Common variable immunodeficiency
CXR	Chest X ray
FIO_2	Fraction of inspired oxygen
GH	Growth Hormone
HPA	Hypothalamo-pituitary-adrenal
HRCT	High-resolution CT
ICU	Intensive care unit
IL	Interleukin
IQR	Inter-quartile range

List of Abbreviations Cont...

Abb.	Full term
K	Potassium
LRTI	Lower respiratory tract infections
MRSA	Methicillin-resistant Staphylococcus aureus
Na	Sodium
NP-II	Neurophysin-II
NPV	Negative predictive value
PaO_2	Partial pressure of oxygen
PCR	Polymerase chain reaction
PCT	Procalcitonin
pre-proAVP	Pre-provasopressin
PRESS	Pediatric Respiratory Severity Score
PSI	Pneumonia Severity Index
SpO2	Saturation of peripheral oxygen
TNF-α	Tumour necrosis factor α
VATS	Video-assisted thoracoscopic surgery
WBC	White Blood Cell
WHO	World Health Organization

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