Medical Studies Department for Children
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A Model of an Evidence-Based Medicine in the Management of Pneumonia in a Sample of Preschool Children

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ABSTRACT

Background: Community-acquired pneumonia (CAP) is a serious illness with significant costs to the society. Clinical decisions based on evidence-based guidelines improve the outcome of management in an approach for appropriate treatment and prompt referral for care. Evidence based medicine (EBM) describes such an approach including the best evidence in making decisions.

Aim: Observing cases managed on EBM and comparing the outcomes with cases managed without EBM in a community hospital, providing approach for the clinician in evaluating and treating patients.

Methodology: An observational study on 56 patients divided into 2 equal groups: 28 patient each: EBM group and NEBM group, observed during a period from June 2015 to 2016 at Abo El Resh hospital, reviewing demographic, clinical data, observing their therapy and outcomes.

Results: A high statistically significant difference for antimicrobial therapy between EBM group who were treated shortly and NEBM group who have delayed treatment for duration 6.8±2.1 days ***(P=0.001).*** Outcomes of NEBM group who needed admission to ICU for 4.2 ± 2.6 days while no patients of EBM group need admission showing high statistical difference ***(P=0.001).***

Conclusion: Effective case management is an effective strategy to reduce pneumonia-related morbidity. Guidelines based on sound evidence are available but used variably.

Recommendations: Unifying clinical practice and scientific evidence could rationalize the use of health resources, improving health care quality and outcomes.

Keywords: *Community acquired pneumonia (CAP); Evidence based medicine (EBM).*

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LIST OF ABBREVIATIONS

AKI:	Acute kidney injury
AMAU:	Acute medical admissions unit
AP:	Antero-posterior
APR:	Acute-Phase Reactants
ARDS:	Acute respiratory distress syndrome
ATS:	American Thoracic Society
BUN:	Blood urea nitrogen
BTS:	British Thoracic Society
CA-MRSA	Community-acquired methicillin- resistant staphylococcus aureus
CAP:	Community-acquired pneumonia
CDC:	Centers for Disease Control
CENTRAL:	Cochrane Central Register of Controlled Trials
COPD:	Chronic obstructive pulmonary disease
CRP:	C-reactive protein
CT:	Computed tomography
CURB-65:	Confusion, blood urea nitrogen, respiratory rate, blood pressure, age
DARE:	Database of Abstracts of Reviews of Effects
DFA:	Direct fluorescent antibody
EBM:	Evidence-based medicine
ED:	Emergency department
ESR:	Erythrocyte sedimentation rate
EMBASE:	Excerpta Medica database
FiO2:	Fraction of inspired oxygen

GRADE:	The Grading of Recommendations, Assessment, Development and Evaluation
H1N1/09:	Hemagglutinin type 1 and Neuramindase type 1
HA-MRSA:	Hospital-acquired methicillin-resistant staphylococus aureus
HIV:	Human immune deficiency virus
HMPV:	Human meta pneumovirus
H5N1:	Hemagglutinin type 5 and Neuramindase type 1
ICU:	Intensive care unit
IDSA:	Infectious Diseases Society of America
IJID:	International Journal of Infectious Diseases
ICD-9-CM:	International Classification of Diseases, Ninth Revision, Clinical Modification
IMCI:	Integrated management of childhood infection
LRTI:	A lower respiratory tract infection
MDTH:	Molecular distance to health
MIC:	Minimum inhibitory concentration
MRSA:	Methicillin-resistant Staphylococcus aureus
NEBM:	Non evidence-based medicine
NICE:	National Institute for Health and Care Excellence
P aeruginosa:	Pseudomonas aeruginosa
PaO$_2$:	Arterial partial pressure of oxygen
PaCO$_2$:	Arterial partial pressure of carbon dioxide
PBP:	penicillin-binding protein
PCR:	Polymerase chain reaction
PCT:	Pro-calcitonin

pH:	Potential hydrogen
PICO:	Population, Intervention, Comparator and Outcome
PICU:	Pediatric Intensive care unit
PVL:	Panton-Valentine leucocidin
RCTs:	Randomized controlled trials
RRI:	Recurrent respiratory tract infections
RSV:	Respiratory syncytial virus
SARS:	Severe acute respiratory syndrome
S. aureus:	Staphylococcus aureus
SCCmec:	Staphylococcal chromosome cassette mobile Element
SPSS:	Statistical Package for Social Sciences
S. pneumonia:	Streptococcus pneumonia
TLC:	total leucocytic count
USA:	United States of America
WBC:	White blood cells
WHO:	World Health Organization

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