



شبكة المعلومات الجامعية
التوثيق الإلكتروني والميكرو فيلم

بسم الله الرحمن الرحيم



HANAA ALY



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شبكة المعلومات الجامعية التوثيق الإلكتروني والميكروفيلم



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جامعة عين شمس

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قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
علي هذه الأقراص المدمجة قد أعدت دون أية تغييرات



يجب أن

تحفظ هذه الأقراص المدمجة بعيدا عن الغبار



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Predictors and Outcomes of Multidrug-Resistant Gram-Negative Bacterial Bloodstream Infections in Pediatric Oncology Patients

Thesis

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List of Abbreviations

Full term	Abb.
<i>Acintobacter baumannii</i>	<i>A baumannii</i>
<i>ATP-binding cassette</i>	<i>ABC</i>
<i>Alanine</i>	<i>ALA</i>
<i>Anaplastic large cell lymphoma</i>	<i>ALCL</i>
<i>Acute lymphoblastic leukemia</i>	<i>ALL</i>
<i>Amphotericin B</i>	<i>AmB</i>
<i>Acute myeloid leukemia</i>	<i>AML</i>
<i>Antimicrobial resistance</i>	<i>AMR</i>
<i>Acute promyelocytic leukemia</i>	<i>APL</i>

<i>APP</i>	<i>Acute Phase reactant protein</i>
<i>Ain Shams University Hospital</i>	<i>ASUH</i>
<i>Atypical teratoid/rhabdoid tumors</i>	<i>ATRTs</i>
<i>Brain stem gliomas</i>	<i>BSGs</i>
<i>Blood stream infection</i>	<i>BSI</i>
<i>Bloodstream infections</i>	<i>BSI</i>
<i>Children's Cancer Hospital Egypt</i>	<i>CCHE</i>
<i>Centers for Disease Control and Prevention</i>	<i>CDC</i>
<i>Chronic myeloid leukemia</i>	<i>CML</i>
<i>Cytomegalovirus</i>	<i>CMV</i>
<i>Central nervous system</i>	<i>CNS</i>
<i>Coagulase negative staphylococcus</i>	<i>CONS</i>
<i>Choroid plexus tumors</i>	<i>CPTs</i>
<i>Carbapenem-resistant Enterobacteriaceae</i>	<i>CRE</i>
<i>Cefotaximase-Munich</i>	<i>CTX-M</i>
<i>Central venous catheter</i>	<i>CVC</i>
<i>dihydropteroate reductase</i>	<i>DHFR</i>

List of Abbreviations (Cont...)

Full term	Abb.
<i>dihydropteroate synthetase</i>	<i>DHPS</i>
<i>Enterococcus faecium</i>	<i>E. faecium</i>
<i>Extended spectrum b-lactamases</i>	<i>ESBL</i>
<i>Ewing sarcoma family of tumors</i>	<i>ESFT</i>
<i>Febrile neutropenia</i>	<i>FN</i>
<i>Germ cell tumors</i>	<i>GCTs</i>
<i>Gram negative bacilli</i>	<i>GNB</i>
<i>Hepatoblastoma</i>	<i>HB</i>
<i>Hepatitis B virus</i>	<i>HBV</i>
<i>Healthcare associated pneumonia</i>	<i>HCAP</i>
<i>Hepatocellular carcinoma</i>	<i>HCC</i>
<i>Hematopoietic cell transplant</i>	<i>HCT</i>
<i>Hepatitis C</i>	<i>HCV</i>
<i>High-grade gliomas</i>	<i>HGGs</i>

<i>Horizontal gene transfer</i>	<i>HGT</i>
<i>High-income countries</i>	<i>HICs</i>
<i>HIFs</i>	<i>Hypoxia-inducible factors</i>
<i>Human immunodeficiency virus</i>	<i>HIV</i>
<i>Hodgkin lymphoma</i>	<i>HL</i>
<i>Hematopoietic stem cell transplantation</i>	<i>HSCT</i>
<i>International Classification of Childhood Cancer – third edition</i>	<i>ICCC-3</i>
<i>International Classification of Diseases for Oncology</i>	<i>ICD-O-3</i>
<i>Infectious diseases</i>	<i>ID</i>
<i>Invasive fungal disease</i>	<i>IFD</i>
<i>Klebsiella pneumoniae</i>	<i>K. pneumoniae</i>
<i>Low-Grade Gliomas</i>	<i>LGGs</i>
<i>lymphoblastic lymphoma</i>	<i>LL</i>
<i>Low- and middle-income countries</i>	<i>LMICs</i>

List of Abbreviations (Cont...)

Full term	Abb.
<i>Lipopolysaccharide</i>	<i>LPS</i>
<i>Multidrug resistance</i>	<i>MDR</i>
<i>Multidrug-resistant Gram-negative rods</i>	<i>MDR GNR</i>
<i>Multidrug-resistant gram-negative bacteria</i>	<i>MDRGN</i>
<i>MDR-GNB</i>	<i>Multidrug resistant gram negative bacteria</i>
<i>Myelodysplastic syndromes</i>	<i>MDS</i>
<i>Minimal inhibitory concentration</i>	<i>MIC</i>
<i>Minimal inhibitory concentration</i>	<i>MIC</i>
<i>Myeloid leukemia with Down syndrome</i>	<i>ML-DS</i>
<i>Methicillin-resistant Staphylococcus aureus</i>	<i>MRSA</i>
<i>Neuroblastoma</i>	<i>NBL</i>
<i>Non-Hodgkin lymphoma</i>	<i>NHL</i>
<i>Non rhabdomyosarcomatous soft tissue sarcomas</i>	<i>NRSTS</i>
<i>Osteosarcoma</i>	<i>OS</i>
<i>Overall survival</i>	<i>OS</i>
<i>Pseudomonas aeruginosa</i>	<i>P aeruginosa</i>

<i>Pseudomonus aeruginosa</i>	<i>P. aeruginosa</i>
<i>Penicillin-binding proteins</i>	<i>PBPs</i>
<i>P-glycoprotein</i>	<i>Pgp</i>
<i>Primitive neuroectodermal tumors</i>	<i>PNETs</i>
<i>Peripheral Primitive Neuroectodermal Tumor</i>	<i>pPNET</i>
<i>praziquantel</i>	<i>PZQ</i>
<i>Rhabdomyosarcomas</i>	<i>RMS</i>
<i>Ribosomal proteins</i>	<i>RpsL</i>
<i>Radiotherapy</i>	<i>RT</i>
<i>Staphylococcus aureus</i>	<i>S. aureus</i>
<i>Saudi Arabia</i>	<i>SA</i>
<i>Staphylococcus aureus bacteremia</i>	<i>SAB</i>
<i>Significant bloodstream infection</i>	<i>SBI</i>

List of Abbreviations (*Cont...*)

Full term	Abb.
<i>Soft tissue sarcomas</i>	<i>STS</i>
<i>United Kingdom</i>	<i>UK</i>
<i>URI</i> <i>Upper respiratory infection</i>	
<i>United States of America</i>	<i>USA</i>
<i>Vancomycin-resistant enterococci</i>	<i>VRE</i>
<i>World Health Organization</i>	<i>WHO</i>
<i>Wild-type</i>	<i>WT</i>

INTRODUCTION

P

ediatric patients with cancer are at great risk of infection

either from disease process or after being immuno-suppressed

by chemotherapy and radiotherapy, this is especially with non-

pathogenic gram negative and multidrug resistant (MDR)

pathogens (*Rosolem et al., 2012*).

The use of prophylactic fluoroquinolones and the use of central lines for intensive chemotherapy have also resulted in

increased rates of bloodstream infections (BSI) and Multidrug-resistant Gram-negative bacteria (MDR-GNB) (*Vázquez-Lopez et al., 2019*).

Multidrug resistance among gram-negative bacteria was defined as resistance to three or more of the following antimicrobials: Ceftazidime, ciprofloxacin, meropenem, gentamicin, ampicillin/sulbactam, or piperacillin/tazobactam. These antimicrobial were chosen because they are commonly prescribed by physicians with the limited availability for antimicrobial agents for treatment of MDR-GNB. (*Pop-Vicas et al., 2008*)

Updated information about the local microbiological epidemiology remain critical for defining the baseline risk of MDR-GNB infections and firmly guiding empirical treatment choices, with the aim of avoiding both under and over-treatment (*Bassetti et al., 2019*).

Patients with risk factors for MDR should start with very broad spectrum antibiotics or combinations. This is “de-