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PREPARATION AND UNIT-DOSE DISPENSING OF GANCICLOVIR IN A UNIVERSITY HOSPITAL: INFECTION TREATMENT ASSOCIATED WITH PHARMACOECONOMICS

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Introduction: Medications represent a large portion of a hospital's budget, and pharmaco-economic studies are one way to reduce these costs. Medications such as ganciclovir can be prepared through compounding, with adjusted dosing, appropriate stability, and preparation environments that comply with standards, allowing unused doses to be reused in subsequent treatments. This enables analysis of cost-benefit, efficacy, and advantages, particularly in personalized treatments. Therefore, this study aimed to conduct a cost evaluation of ganciclovir dose reuse within a unit-dose medication distribution system in a university hospital.

Methods: A descriptive, retrospective study based on a documentary cost survey conducted between May 2024 and May 2025. The study was approved by the Institutional Research Ethics Committee (CAAE: 86159818.6.0000.5231). All patients hospitalized and treated during the study period were considered eligible and included. The following information was collected: patient name, sex, hospitalization unit, ganciclovir medication data, prescription date, and clinical service. To evaluate savings generated by reusing compounded ganciclovir doses, an analysis of prescription prevalence and reused doses was performed.

Results: Prescriptions from 28 hospitalized patients who received treatment according to medical prescription were analyzed. The medication was compounded in compliance with all sterility criteria established by departmental protocols and then forwarded for administration. The infectious diseases medical ward followed most cases (57%), as the medication is indicated for viral infections. A total of 491 ganciclovir doses with varying concentrations were prepared in the Unit Dose Sector, using 200 vials; based on calculations, 291

vials were saved. The cost per vial in the procurement process was R\$26.00, resulting in an estimated savings of R\$7,566.00.

Conclusion: Data analysis indicates that ganciclovir compounding generated savings in vial consumption. As patient and service volumes increase, measures should be implemented to reduce budgetary costs.

Keywords: Pharmaco-economics, Sterile Hospital Compounding, Medication Distribution System, Medication Management, Ganciclovir.

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PRESENCE OF NEW DELHI METALLO-B-LACTAMASE (NDM) –PRODUCING ENTEROBACTER CLOACAE IN A NEONATAL ICU: IMPORTANCE OF SURVEILLANCE CULTURES FOR EARLY DETECTION

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Introduction/Objectives: *Enterobacter cloacae* (*E. cloacae*) is a Gram-negative bacillus frequently isolated in Intensive Care Units (ICUs). Production of the New Delhi Metallo- β -lactamase (NDM) enzyme confers broad resistance to β -lactams, including carbapenems, limiting therapeutic options. In neonates, colonization by this multidrug-resistant microorganism (MDR) represents a high risk of infection and dissemination. Surveillance cultures (SCs) enable early identification of asymptomatic carriers, allowing immediate actions for MDR prevention and control in critical environments. Selection of *E. cloacae* NDM for this study was justified by its detection in 85% of SCs performed in a Neonatal ICU (NICU), highlighting its epidemiological relevance. The objective was to analyze the time elapsed between NICU admission and microbiological detection of *E. cloacae* NDM through SCs in a public hospital in São Paulo.

Methods: A retrospective descriptive study conducted between July 2024 and May 2025. Laboratory data from SCs and electronic medical records were analyzed, considering time between NICU admission and laboratory detection (colonization), sampling sites, progression from colonization to healthcare-associated infections (HAIs), and mortality.

Results: Forty-seven *E. cloacae* NDM samples were identified in SCs from 28 neonates. Time between NICU admission and MDR identification was stratified by hospitalization week: 1st: 10.6%; 2nd: 40.5%; 3rd: 40.4%; 4th: 10.6%; 5th: 2.1%. Sampling sites were: anal 44.7%; oral 25.5%; axillary 17%; inguinal 8.5%; nasal 4.3%. Mortality rate was 10.7%, and colonized neonates did not develop HAIs.

Conclusion: The most significant period for MDR identification through SCs occurred during the 2nd and 3rd weeks of hospitalization (80.9%). Clinical cultures and medical record reports did not confirm subsequent infectious episodes. SCs demonstrated high value in detecting *E. cloacae* NDM colonization in the NICU, reinforcing the importance of precise laboratory identification and continuous microbiological surveillance. Rapid response enabled timely interventions, such as implementation of contact precautions, environmental control, and revision of care protocols, underscoring the importance of this strategy in controlling MDR dissemination and preventing HAIs in neonatology.

Keywords: Surveillance Cultures, Colonization, NDM, Microbial Resistance, Neonatal ICU.

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FIRST CASE OF ISOLATION OF PSEUDOMONAS AERUGINOSA PRODUCING METALLO-GROUP (VIM) AND SERINE-GROUP (KPC) CARBAPENEMASES CONCOMITANTLY DURING ICU HOSPITALIZATION IN A TEACHING HOSPITAL IN PARANÁ

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Introduction: Excessive use of antibacterial agents may lead to the selection of superbugs.

Case description: An 81-year-old man with a history of colostomy performed eight years earlier due to colonic neoplasia was admitted on 05/07/25 with dark vomiting, abdominal pain, and distension. On the day of admission, he underwent exploratory laparotomy (EL) for obstructive acute abdomen. Antibiotic therapy with ceftriaxone and metronidazole was initiated. He remained hospitalized and, after seven days, developed new symptoms of colonic obstruction and signs of peritonitis, requiring a new EL. Culture of abdominal fluid was negative. Piperacillin–tazobactam was initiated after the EL. On 05/17, he was transferred to the Intensive Care Unit (ICU), intubated, and in septic shock with an abdominal focus. Tracheal aspirate culture (TAC) on 05/19 was negative. On 05/22, rectal swab culture detected *Klebsiella*

pneumoniae producing KPC and *Pseudomonas aeruginosa* producing VIM (Pa-VIM). The patient was therefore placed in total isolation. On 05/25, he developed new abdominal-focus sepsis, with sudden leukocytosis from 16,000 to 36,000 cells/mm³ and left shift up to myelocytes. On the same day, antibiotic therapy was escalated to meropenem (double dose), vancomycin, and polymyxin B. Fifteen days after the start of antimicrobials, cultures from TA isolated carbapenem-resistant *Acinetobacter baumannii* and Pa-VIM+KPC concomitantly, representing the first KPC- and VIM-co-producing isolate in the region. The patient was afebrile, asymptomatic, with no radiological evidence of respiratory infection, and was clinically considered colonized according to ANVISA criteria [1]. Despite the presence of pathogens in the TA, as the patient remained stable and antibiotic therapy had completed 14 days of the expanded regimen, treatment was discontinued, with continued close observation. He was discharged from the ICU on 06/26. After 52 days of hospitalization, the patient remains afebrile, with no new microbial isolates, and is recovering slowly.

Comments: We highlight the first isolation of a VIM-producing organism in this hospital, identified as Pa-VIM+KPC, with selection and dissemination of genes among isolates during treatment and hospitalization. This report reinforces the need for patient isolation to prevent dissemination, as no other patient in the hospital presented colonization or infection by VIM-producing isolates. Furthermore, it underscores the critical importance of the clinician's ability to distinguish between infection and colonization by multidrug-resistant bacteria.

Keywords: *Pseudomonas aeruginosa*, Epidemiological Surveillance, Carbapenemases, Pharmacological Resistance, Case Report.

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SHORT-DURATION ANTIBIOTIC PROPHYLAXIS IN THE CONTEXT OF CARDIAC SURGERY: A SYSTEMATIC REVIEW AND META-ANALYSIS

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