Risk factors for Extended Spectrum Beta-Lactamase (ESBL)- producing bacteria infections in ICU of Jogja Hospital

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Introduction: Infection by Extended Spectrum Beta-Lactamase (ESBL)-producing bacteria in Intensive Care Unit (ICU) is associated with treatment failure, prolonged hospital stay, increased costs and patient mortality. The factors of infection by ESBL-producing bacteria are important to figure out so that prevention and control efforts can be made. The aim of the study is to understand the risk factors associated with ESBL- producing bacteria infections in ICU of Jogja Hospital. **Method:** This case control study included ICU's patients who have an infection with confirmed *E. coli* or *K. pneumoniae* based on microbiological examination from January-December 2023. The patient's data were obtained from the medical record to find the risks factors. Cases were defined as *E. coli* or *K. pneumoniae* ESBL, while controls were defined as non ESBL *E. coli* or *K. pneumoniae*. Bivariate analysis was carried out on independent variables (sex, age, length of hospitalization, comorbidity, history of cephalosporin, duration of antibiotic, utilization of urinary catheter and central venous catheter, exposure to mechanical ventilation, and presence of open wounds). Risk factors with P values <0.25 on bivariate analysis were included in multivariate logistic regression analysis. Two- sided P values less than 0,05 were considered statistically significant. **Result:** There were 30 patients with ESBL-producing *E. coli* or *K. pneumoniae* (cases) and 32 patients with non ESBL-producing *E. coli* or *K. pneumoniae* (controls). Based on multivariate analysis, the presence of open wounds has statistical significance, OR 6.52 (IK 95% p = 0.011). **Conclusion:** The presence of open wounds is associated with the occurrence ESBL-producing *E. coli* or *K. pneumoniae* infection in ICU of Jogja Hospital.

Keywords: Risk factor; ESBL infection; ICU

Antimicrobial Stewardship & Healthcare Epidemiology 2025;5(Suppl. S1):s22

doi:10.1017/ash.2025.139

The effectiveness of aseptic non-touch technique audit cycle implementation on reducing the surgical site infection at EMC Group Hospital

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Background: The surgical site infection (SSI) event is still the main cause of morbidity and increases the length of stay (LOS) in a hospital, costs, and deaths. One of the causes of SSI is nurses' non-compliance with aseptic techniques. Exposure can be increased and variability in aseptic techniques can be minimized by implementing the aseptic non-touch technique (ANTT) strategy. This research investigated the effectiveness of implementing the ANTT method on reducing the number of SSI events in postoperative patients. **Methods:** This research used a pragmatic evaluation method with a mixed methods approach. The ANTT method was implemented through five stages i.e., planning, launching, educating, assessing, and monitoring. Data were collected using pre/post-questionnaires, structured interviews, and audit observations via the electronic audit. This research was conducted for 24 months and involved 138 nurses from three hospitals. **Results:** The mean compliance rate of aseptic techniques after implementing the ANTT method was 93%, with the glove use at 92%, contaminated gloves at 0%, aseptic area at 84%, contaminated aseptic area at 0%, disinfected procedure trays at 75%, protected keypart at 84%, contaminated keyparts by hands/ equipment at 2.6%, and hand hygiene after gloves at 98%. The rate of SSI events dropped from 0.3% to 0.1% in 12 months. There was a significant difference between the pre and post-implementation of the ANTT (P-value < 0.001). Moreover, implementing the ANTT method effectively reduced the SSI events in postoperative patients (P-value < 0.001). **Conclusions:** The implementation of ANTT improved compliance with safe and effective aseptic techniques. The ANTT compliance audit results reflect a reduction in the incidence of SSIs, thereby reducing costs and LOS in postoperative patients. The program will be expanded to five other group hospitals.

Keywords: Aseptic Non-touch Technique; Audit Cycle; Aseptic Technique; Surgical Site Infection

Antimicrobial Stewardship & Healthcare Epidemiology 2025;5(Suppl. S1):s22

doi:10.1017/ash.2025.140

Risk factors of multi-drug resistant organism in patients hospitalized with community acquired pneumonia at Wahidin Sudirohusodo Hospital

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Objectives: Infection with antibiotic resistant organisms has become a global problem, including in cases of pneumonia. Multi drug resistance organism (MDRO) has an impact on mortality, morbidity, and health costs. There are several risk factors that play a role in the incidence of MDRO in community acquired pneumonia. The purpose of this study was to analyze the risk factors for the incidence of MDRO in hospitalized patients with community acquired pneumonia at Wahidin Sudirohusodo Hospital. **Methods:** This study used an analytic observational method with a retrospective cohort. Data were taken from patient medical records from July-December 2023. **Results:** There were 49 (46.7%) MDRO and 56 (53.3%) non-MDRO. Based on statistical tests, MDRO infection is associated with comorbid malignancy (p value 0.002) and cardiovascular comorbidities (p value 0.015). The most common pathogens found were Acitenobacter baumanii (22.8%) and Klebsiella pneumonia (20%). **Conclusions:** Risk factors associated with the incidence of MDRO in community acquired pneumonia patients are malignancy and cardiovascular disease.

Keywords: risk factors; multidrug resistant organism; community acquired pneumonia

Antimicrobial Stewardship & Healthcare Epidemiology 2025;5(Suppl. S1):s22

doi:10.1017/ash.2025.141

Healthcare-associated respiratory viral infections are an important cause of mortality and morbidity– evidence from cohort study of 1700 patients

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Objectives: Healthcare-associated respiratory viral infections (HA-RVI) remain a threat despite the fading memory of the pandemic. To better understand the impact of HA-RVI, we reviewed endemic respiratory viral infections in our tertiary academic hospital just before the pandemic. **Methods:** A retrospective analysis of a hospital epidemiology database with all patients tested positive for respiratory viruses between Jan2016 – Dec2019 was conducted. Testing was ordered by attending physicians and done using immunofluorescence assays or multiplex PCR. HA-RVI patients were identified based on positive virologic tests >48 hours after admission. Data analyses were performed on Vassar Stats. **Results:** Of the 1700 patients included in this study, 315(18.5%) had HA-RVI while 1385(81.5%) had community-acquired infections (CAI). Influenza, enterovirus/rhinoviruses and respiratory syncytial virus were the most common