Conclusions: On account of old age and some of them had given up aggressive treatments, antimicrobial adjustment by IDs’ recommendation showed only marginal effects against fatality. Under such circumstances, it should be more prudent to prescribe antibiotics.

**THE ANTIMICROBIAL STEWARDSHIP PROGRAMMES REDUCE MULTIDRUG RESISTANT ACINETOBACTER BAUMANNII INFECTION IN THE INTENSIVE CARE UNIT (ICU) OF SILOAM HOSPITAL, TANGERANG, INDONESIA**

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Purpose: Multidrug resistant Acinetobacter baumannii is one of the most common cause of hospital acquired infection (HAIs) in intensive care units (ICUs) worldwide and commonly associated with increasing mortality and length of stay. To address with the increasing of multi-drug resistant A. baumannii infection, antimicrobial stewardship programmes are promoted worldwide to encourage judicious antimicrobial use and prevent the emergence of resistance. The aim of this study is to determine the impact of the antimicrobial stewardship programmes in preventing the development of A. baumannii antimicrobial resistance.

Methods: During the period from June 2012 till June 2013, A. baumannii isolates data from sputum, wound, blood, urine, and cerebro-spinal fluid were collected and used as a baseline data. The identification of A. baumannii and resistant pattern was performed by using VITEK 2 Compact according to Clinical Laboratory and Standards Institute (CLSI). Socialization and implementation of the antimicrobial stewardship programmes including: (1) determining the empirical antimicrobial drug use in the ICU, (2) using the antibiotic prescription chart to ensure antibiotic prescription based on microbiological culture and sensitivity.

Results: From the baseline data, A. baumannii found in 16 isolates and were multidrug resistant. The majority of the isolates sensitive to colistin (100%) and cefopporazone/sulfactam (77%). After the implementation of antimicrobial stewardship programmes, the incidence of A. baumannii finding was decreasing into 3 isolates and showed the increasing sensitivity to cefoporazone/sulfactame (89%) that use as empirical therapy for gram negative bacteria infection in the ICU. The sensitivity to the other antimicrobial; carbapenem, imipenem, meropenem, aminoglycoside were also increasing.

Conclusions: From the baseline data, A. baumannii infection in the ICU. The sensitivity to the other antimicrobial; carbapenem, imipenem, meropenem, aminoglycoside were also increasing. To have the antimicrobial stewardship programmes helped us to establish guidance ideally in the future.

**EVALUATION OF LEVOFLOXACIN UTILIZATION RATIONALITY BY COMPUTERIZED PHYSICIAN ORDER ENTRY SYSTEM**

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Purpose: Levofoxacin belongs to the third-generation Fluoroquinolones (FQs). It is not only the broad-spectrum antibiotic for G (+) and G (−) (Escherichia coli, Klebsiella pneumonia, Pseudomonas aeruginosa) but also more activity to the atypical bacteria (Chlamydia, Mycoplasma). In this retrospective study, we evaluated the converting ratio between injection and oral forms. This drug utilizing evaluation (DUE) study will help to elevate the reasonable use of levofloxacin in the hospital.

Methods: This study is a retrospective study in a regional hospital. Cases were collected from April 2014 to June 2014 for all hospitalized patients using Levofoxacin. The reasonableness assessment of Levofoxacin prescribing included indications, doses, bacterial culture or consulted with Infectious Diseases physician. The recommendation doses for renal dysfunction followed by SANFORD GUIDE. Patient’s creatinine clearance (Clcr) was monitoring for adjusting the therapeutic dose accordingly. Descriptive statistical analysis was performed in the study.

Results: Total 158 cases were recruited in the study. The bacterial culture was performed in 157 cases (99.6%). Depending on bacterial culture results, considering as reasonable using levofloxacin was 86 cases (54.4%), and empirical therapy counted as 61 (38.6%), which were also consulted with Infectious Diseases physicians prior to administration. In addition, 158 cases (100%) were monitored Clcr, 143 cases (90.5%) had performed dose adjustments in accordance with appropriate therapeutic doses by renal function. Moreover, 23 cases used Injection form over 7 days during hospitalization period, 3 cases (13.0%) switched to oral form during hospitalization period, 12 cases (52.2%) did not switch during hospitalization period, 8 cases of them (8/23, 34.8%) did not switch during hospitalization period but took home with oral levofloxacin.

Conclusion: This study showed that the reasonableness of the use of Levofloxacin was counted as 86 cases (54.4%). The ratio of injection dosage form converted to oral form was not ideally. The results will provide physicians to use the build-in computerized physician order system reminding to improve the efficacy of levofloxacin.

**EVALUATION OF PIPERACILLIN/TAZOBACTAM UTILIZATION APPROPRIATENESS**

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Purpose: The aim of this study was to evaluate the appropriateness of piperacillin/ tazobactam (Tapimycin®; YUNGSHN, Taichung, TW) usage in a regional hospital, retrospectively.

Methods: This retrospective study was designed to recruit all patients admitted to the regional hospital with prescribing Tapimycin® from October, 2013 to December, 2013. The electronic medical records were reviewed and studied, respectively. We collected patient’s data including demographics, empirical indication, infusion time, dose and dosing interval, culture and susceptible results, concomitant antibiotics, and de-escalation of the antimicrobial regimen. The endpoint of overall appropriateness was evaluated and dose adjustment following renal function monitoring by creatinine clearance (Clcr) calculated by Cockcroft-Gault Equation.

Results: During this period, 181 cases, 112 female cases and 69 male cases were obtained from 159 patients. The average age of the cases was 67.4 ± 16.59. The average administration day was 10.01 ± 4.25. The main indication for initiation administration was pneumonia (109/181; 60%). There were 41 (41/360, 11.39%) isolations as Pseudomonas aeruginosa; 35 (35/ 360, 9.72%) were Klebsiella pneumoniae; 21 (21/360, 5.83%) were Escherichia coli. Thirty-seven (20.44%) cases infusion time were longer than 60 min. There were 111 cases (61.33%) with normal renal function. Renal dysfunction with dosage adjustment was counted as 51 cases (28.18%). However, there were 13 cases (7.18%) with renal dysfunction without dose or dosing interval adjustment. At the endpoint of evaluation, 72 cases (40%) where antibiotics were changed to narrow-spectrum antimicrobials or oral antibiotics were considered as de-escalation. The overall rate of appropriateness of Tapimycin® therapy was 138/181 (76%).

Conclusion: Our results present the tendency toward the appropriate rate of Tapimycin® utilization at our institution was only 76%, especially, when the selection of treatment based on initial empirical therapy was inappropriate. Without dosing adjustment was given the concerns about the increasing occurrence of antibiotic adverse events. Further studies may be performed to establish guidance ideally in the future.

**ASSOCIATION BETWEEN ANTIMICROBIAL TREATMENT WITH FLUOROQUINOLONES VERSUS ß-LACTAMASE INHIBITOR AND RISK OF PNEUMONIA-RELATED HOSPITALIZATION AMONG PATIENTS WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE**

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Purpose: Patients with chronic obstructive pulmonary disease (COPD) have an increased incidence of pneumonia caused by *Pseudomonas aeruginosa*. A respiratory fluoroquinolone alone or a beta-lactam plus a macrolide is recommended in the presence of comorbidities according to Infectious Diseases Society of America/American Thoracic Society guideline for community-acquired pneumonia. However, few studies have directly compared the two regimens. The present study aimed to compare the risk of pneumonia-related hospitalization in COPD patients treated with fluoroquinolones versus beta-lactam/beta-lactamase inhibitor combinations.

Methods: We conducted a retrospective cohort study and identified 19,876 episodes of COPD with pneumonia in the outpatients from the Taiwan National Health Insurance Research Database (NHIRD) during 2002–2011. Using the propensity score analysis, patients receiving fluoroquinolones and beta-lactam/beta-lactamase inhibitor combinations were matched for baseline covariates (n = 1,296 episodes for each group). The primary outcome was pneumonia-related hospitalization more than 3 days after receiving antibiotics, while the secondary outcomes were treatment failure, 30-day mortality and medical costs.

Results: The rate of pneumonia-related hospitalization was 3.9% in the fluoroquinolone group and 3.5% in the beta-lactam/beta-lactamase inhibitor combination group (adjusted hazard ratio [HR], 1.11; 95% confidence interval [CI], 0.74–1.66). Compared with beta-lactam/beta-lactamase inhibitor combinations, fluoroquinolones did not offer less treatment failure (28.2% vs. 31.3%; HR, 0.86; 95% CI, 0.73–1.02) and 30-day mortality (0.5% vs. 0.4%; HR, 1.40; 95% CI, 0.45–4.41). The total medical costs (15,847 vs. 13,644 Taiwan dollars) and pneumonia-related costs (6,060 vs. 4,646 Taiwan dollars) were similar between these two groups (both P > 0.05).

Conclusions: In COPD outpatients with pneumonia, fluoroquinolones were associated with similar outcomes compared with beta-lactam/beta-lactamase inhibitor combinations. Our findings supported the current consensus recommendations.

DECREASED ANTIBIOTIC RESISTANCE AND DEFINED DAILY DOSE AFTER IMPLEMENTATION OF ANTIMICROBIAL STEWARDSHIP PROGRAM IN A LOCAL HOSPITAL IN TAIWAN

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Purpose: Excessive antibiotic consumption results in bacterial antibiotic resistance and is a financial burden. The effect of a new antibiotic restriction policy with an antimicrobial stewardship program (ASP) was assessed in this study.

Methods: A cohort study of the ASP instituted in Nan Men general hospital, a 141-bed local hospital in Taiwan, was designed to compare pharmaceutical, microbiological and financial changes during a 3-year period from 2011 to 2013. The cost of antimicrobials, defined daily dose (DDD) and susceptibility to 13 antibiotics were calculated before and after the ASP implementation on January 1, 2012.

Results: The average monthly cost of antibiotics decreased 37.0% from $301,468 in 2011 to $189,932 in 2012 (P < 0.001), and it also decreased from 2012 to 2013 by 15.6% from $189,932 to $162,021.3 (P = 0.022) (Figure 1). Antibiotic resistances of the two most common bacteria found in laboratory of this hospital, *Escherichia coli* (E. coli) and *Klebsiella pneumoniae* (K. pneumoniae), were examined. The new antibiotic restriction policy decreased or maintained antibiotic resistance to 10 antibiotics (76.9%) against E. coli and all 13 antibiotics (100%) for K. pneumoniae. Total intravenous antibiotic DDDs of the inpatients were 21932, 16816 and 14541 in 2011, 2012 and 2013, respectively. The yearly sum of all intravenous antibiotic DDDs of all intravenous antibiotics decreased by 7391.8 from 2011 to 2013. Total intravenous antibiotic DDDs per 100 bed-days of the inpatients were 67.1, 55.0 and 49.4 in 2011, 2012 and 2013, respectively. A total of 17.1 DDDs per 100 bed-days of inpatients decreased while from 2011 to 2013.

IMPROVEMENT OF CIPROFLOXACIN UTILIZATION RATIONALITY BY COMPUTERIZED PHYSICIAN ORDER ENTRY SYSTEM

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Purpose: Ciprofloxacin is a broad spectrum fluoroquinolone antimicrobial agent. Dose adjustments to prevent toxicity effects recommended in patients with impaired renal function are various among countries. Prescribing rationally will help to ensure the clinical utilization of this valuable antimicrobial drug continuously.

Methods: We conducted a retrospective study of the Ciprofloxacin usage appropriately on 112 patients between March, 2014 and June, 2014, at a Regional Teaching Hospital in Taichung. Assessment criteria of the Ciprofloxacin using rationality included indication, bacterial culture and dosage forms conversion. Cockcroft and Gault Equation calculating creatinine clearance was used to assess patients’ renal function referring to 2013 SANFORD GUIDE in accordance with dose adjustment in the study. Descriptive statistical analysis has been performed.

Results: The mean age of these patients was 54.5 (± 19.35). In these patients, 43 of 112 (38.4%) were infectious gastroenteritis, 22 of 112 (19.6%) were urinary tract infections, and 11 of 112 (9.8%) were neutropenia. There were 42 people (37.5%) growth nothing in the culture, *Pseudomonos aeruginosa* in total of 16 (14.3%), and *Escherichia coli* in total of 9 people (8%). Five over 18 people (27.8%) converted from injection administration to oral medication so the conversion rate was not ideal in the hospital. The proportion of giving appropriate dose for renal dysfunction patients was 56.1% (23/41 people). Thus, the study results in Ciprofloxacin reasonableness using was considered as 83.9% (94/112).

Conclusion: At present, based on the computerized physician order entry (CPOE) system, dose adjustment was implemented on renal function impairment patients directly when physicians prescribe ciprofloxacin on March 2014. The reasonable performance in the Ciprofloxacin utilization is 83.9% currently. The higher rationality rate is expected in the future in order to provide patients with effectiveness antimicrobial treatment and protect patients’ medication utilizing safety.