PS 1-011

DECREASING MULTI-DRUG RESISTANT ORGANISMS CROSS-INFECTION RISK BY ANTIMICROBIAL STEWARDSHIP PROGRAM

Ya-Fang Wang a, b, Wen-Chuan Lin a, Yu-Wen Huang a, Chen-Hung Lu a, Wei-Chiu Tai a, Lui-Jung Chen a, I-Ling Chen b, d, Li-Hsiang Su a, d, Chen-Hsiang Lee a, c, d

Shuang Ho Hospital, New Taipei, Taiwan; aInfection Control Committee, Chi Mei Medical Center, Taiwan; bDivision of Infectious Diseases, Department of Medicine, Taipe Medical University, Shuang Ho Hospital, New Taipei, Taiwan

Purpose: Due to increasing multidrug-resistant pathogens, our hospital started to join 3 years’ program of CDC of Taiwan Surveillance of Antimicrobial Resistance in year 2013. Team of hospital antimicrobial control of our hospital is formed. Our strategies are mainly focused on two points: the appropriateness of using antibiotic and infection control policy. The infection control policy is included: hand hygiene, standard precautions of multi-drug-resistant organisms, standard environmental cleaning.

Methods: Linking nurses system is formed. Regular schedule meeting is arranged to ensure the implementation of hand hygiene policy and feedback with incentive by the end of year. Using the computer alarm system to remind staff to take standard precautions for patients infected with multi-drug-resistant organisms. Environmental surveillance is done by isolating culture of multidrug-resistant organisms and using ATP.

Results: The rate of hand hygiene compliance was >95%, implementation rate for standard precaution for patients infected with multidrug-resistant organisms was 100%. The rate for environmental cleaning was >90%. In year 2012 the hospital acquired infection density rate was 6.3% and ICU was 27.5%. After an effort making in 2013, the result was much improved, the former was 1.5%, and the latter was 3.7%. The rate of multidrug-resistant organisms in year 2012 was CRAB 23.3%, CRE.coli1.6%, CRKP13.5%. In year 2013, the cases number was reduced, 64.2%, 27.3%, 14%, respectively. Conclusion: Our study revealed that participating the Taiwan Surveillance of Antimicrobial Resistance program was able to use antibiotic appropriately and reduce cases of multidrug-resistant organisms.

PS 1-012

EXPERIENCES SHARE OF ANTIBIOTIC PRESCRIPTION CONSULTATION, DE-ESCALATION AND FEEDBACK MECHANISM TO ENHANCE THE EFFICACY OF ANTIBIOTICS STEWARDSHIP

Hui-Yun Liang a, b, Bo-An Su a, b, *c, I-Ling Chen a, b, Hung-Jen Tang a, b, *c

Infection Control Committee, Chi Mei Medical Center, Taiwan; aDepartment of Infectious Disease, Chi Mei Medical Center, Taiwan; bDivision of Internal Medicine, Chi Mei Medical Center, Taiwan

Purpose: Antibiotic stewardship is one of the most important issues for the hospital infection control. The rule and regulation of the stewardship system has been operated for years. However, facing up to the constantly detection of the various multi drug resistance microorganisms, brings out that the rigor examinations and the control execution effectiveness of the antibiotic needs to be reviewed and improved all the time.

Methods: Our hospital has utilizing the database systems to assist executing in the antibiotic medication control since 2004. When antibiotics was prescribed via every medical system, the database system will assist to check the culture reports and consultation records in seven days. The infectious disease specialist would follow the “laboratory reports”, “current medical orders”, “nursing records” and “TPR” at the analysis systems to examine then provide the professional commend for the upgrade or downgrade. For example, before the report of the blood culture, it could only approved three days of antibiotics. And the infectious disease specialist doctors also will control the using of the categories and days then permit to use. The system also provided “antibiotic adjustment proposals” in order to make the communications and feedbacks between the clinicians and infectious disease doctors.

Results: The infection control team also performed the statistical analysis regularly according to this information and most of the clinicians can identify to list the proper prescription by the infectious disease specialist professional advices. Antibiotics appropriate ratio increased from 30% to 60%.

Conclusions: The infectious disease specialist, the infection control and antibiotic teams working so hard for the execution and declaration for the antibiotic. The clinicians can use antibiotics correctly via ASP. We wish the antibiotics stewardship effectiveness and experiences can be shared with the partner hospital and take this as a reference to carry out the policy.

PS 1-013

ANTIMICROBIAL STEWARDSHIP: A REVIEW OF AUDIT AND FEEDBACK SYSTEMS AND EVALUATION OF OUTCOMES IN A MEDICAL CENTER IN TAIWAN

Ya-Wen Chang a, b, *c, I-Ling Chen b, d, Li-Hsiang Su a, d, Chen-Hsiang Lee a, c, d

Committee of Hospital Infection Control, Taiwan; aDepartment of Pharmacology, Taiwan; bDivision of Infectious Diseases, Taiwan; cKaohsiung Chang Gung Memorial Hospital, Chang Gung Medical Foundation, Taiwan

Purpose: Antimicrobial stewardship (ASP) is an emerging field currently defined by a series of strategies and interventions aimed toward improving appropriate prescription of antibiotics in all healthcare settings. To estimate the effectiveness of professional interventions that, alone or in combination, are effective in antibiotic stewardship for hospital inpatients, to evaluate the impact of these interventions on reducing the incidence of antimicrobial-resistant pathogens and their impact on clinical outcome.

Methods: We developed a hospital-wide computerized antimicrobial approval system (HCAAS) to guide the use of antimicrobial agents in late 2004 in a 2700-bed medical center in Taiwan. Three strategies for improving antimicrobial stewardship were implemented: education, clinical infection specialists-based intervention, and regular audit and feedback interventions. The steering panel of the program was a committee composed of infection specialists, attending physicians, clinical pharmacists, infection control nurses, and medical laboratorists.

Results: Outcomes were to evaluate the impacts of HCAAS on the hospital from 2000 to 2012. Analysis of the rate approval to audit physicians and clinicians recommend acceptance rate in order to enhance communication between different divisions’ physicians and establish partnerships. This antibiotic management mechanisms by subsequent statistical analysis showed a significant reduction in the use of regulatory antibiotics and healthcare-associated infections rate, total mortality, length of stay, patient was discharged 14 days after returning to rate the quality of patient outcomes indicators are showing positive to reduce the tendency.

Conclusions: The results show that interventions to reduce excessive antibiotic prescribing to hospital inpatients can reduce hospital-acquired infections, and interventions to increase effective prescribing can improve clinical outcome. This update provides more evidence about unintended clinical consequences of interventions and about the effect of interventions to reduce exposure of patients to antibiotics.

PS 1-014

PHARMACISTS IN AN ANTIMICROBIAL STEWARDSHIP PROGRAM

Hsin-Ying Huang, Hsiao-Ching Lin, Agnes L. F. Chan . Department of Pharmacy, Taian Municipal An-Nan Hospital-China Medical University, Taiwan

Purpose: The Antimicrobial Stewardship Program (ASP) is an innovative and intensive practice-based activity for pharmacists focusing on the pharmacist’s role in the area of appropriate use of antimicrobial agents
THE EFFECTIVENESS OF REDUCING THE AMOUNT OF ANTIBIOTIC RESISTANT STRAINS BY PROMOTING THE ANTIMICROBIAL STewardSHIP VIA ANTIMICROBIAL MANAGEMENT TEAM OF A MEDICAL CENTER

Huay-Jen Huang a,e, Shu-Ju Huang a,e, Jung-Hui Chen a,e, Yu-Hua Huang a,e, Pei-Cheng Cheng a,e, Shih-Ming Tsao a,b,e, Yuan-Ti Lee a,b,e, Chien-feng Li a,b,e, Yi-Tung Chang a,e, Chia-Chi Chen a,b,e, Min-Chi Lu a,b,e, *Infection Control Team, Taiwan; bInfectious Diseases Division, Taiwan; cDepartment of Pharmacy, Taiwan; dInformation Technology, Chung Shan Medical University Hospital, Taichung, Taiwan; eInfection Control Team, St. Joseph’s Hospital, Yunlin, Taiwan

Purpose: The excessive and inappropriate use of antibiotics and the spread of resistant strains are the main causes of the increase in resistant strains. Antimicrobial stewardship is an important strategy to delay occurrence of antibiotic resistance. Effective management relies on the completion of the entire medical team. In this medical center, the cost of antibiotic use accounted for 9.4% of the total drug cost and the total amount of antibiotics accumulated was 2612.3 DDD in 2010. The proportion of healthcare-associated CRAB and MRSA isolates was 68.1% and 0.2 percent in 2010. However, antibiotic utilization of emergency department antibiotic usage in order to delay the occurrence and spread of drug-resistant strains.

Methods: We established ASP team in Jan., 2014, and Infectious Diseases (ID) department and Infectious Diseases Control team (IC) grouped and issued guidelines and manuals for antibiotic uses. Education, training and detailed discussion were designed for each branches of hospital personnel. ID physician reviewed antibiotic prescriptions, replied with immediate feedback, and followed the de-escalation strategy. IC measures were enhanced hospital-wide. Pharmacy was committed to enhance antibiotic monitoring, including the calculation of defined daily dose (DDD). Clinical microbiology laboratory evaluated specimen contamination rate, reduced waiting time of preliminary and final reports, and analyzed MDRO statistics. The department of Information Management developed proper warning and information systems. The ASP team members fully cooperated with each other to execute the program.

Results: The cost of the antibiotic drug consumption in that of total drugs declined from 9.4% in 2010 to 7.7% in 2014. The inpatient antibiotic utilization rate declined from 30% in 2010 to 26.5% in July of 2014, the outpatient antibiotic utilization rate fell to 0.1% in 2014 from 0.2 percent in 2010. However, antibiotic utilization of emergency department remained at 20% through these years. The DDD of total antibiotic use fell from 2612.3 in 2010 to 2486.1 in 2014. CRAB isolates of healthcare associated infections decreased significantly from 68.1% in 2010 to 33.3% in 2014. The rare of MRSA isolates maintained at around 83.0% of suggestions.

Conclusions: Antimicrobial stewardship refers to coordinated interventions designed to improve and measure the appropriate use of antimicrobials by promoting the selection of the optimal antimicrobial drug regimen, dose, duration of therapy, and route of administration. The intervention program improved the appropriateness of antibiotic prescriptions.