positive (GPC) and negative (GNB) bacteria were noted by routine schedule reports. We designed this study to investigate the correlations between MDR bacteria and antibiotics used in the hospital.

Methods: 1. By way of Tatung Information Systems, we collected the data of
(1) Amounts of bacteria and their resistance.
(2) All antibiotics used over Jan, 2010 to Jun, 2014.

2. We stratified every 3 months for 1 unit (season) and gained 18 units of above data.
3. We checked the positive and negative pressure of some antibiotics to MDR bacteria by T-test and correlation coefficient.

Results: 1. There were 34 injectable forms of antibiotics ever present in our 54 months observation periods.
2. The initial data were showed (by years)

(1) Positive correlations: fluoroquinolone (ESBL-E. coli)
(2) Negative correlations: cefalosporin, penicillin, glycopeptide (CR-P. aeruginosa) and aminoglycoside (CR-A. baumannii)

3. More future survey was needed to get details of cross effect between antibiotics and MDR bacteria.

Conclusions: Sin Ying Hospital owns 341 beds (including ICU, acute and chronic care unit) available and had about 52,000~54,000 patient-days per year. Some patients were recycling between medical center, nursing home and hospitals frequently. MDR bacteria (including MRSA, ESBL-E. coli/K. pneumoniae, CR-AB, CRPA) were important flora of healthcare-associated infection and colonization of these patients. So, we want to set up the database of the pattern of bacteria / antibiotics and take better care for these patients.

THE ESTABLISHMENT OF ANTIBIOTIC MANAGEMENT AND REVIEW MECHANISMS IN OUTPATIENT CLINIC TO EFFECTIVELY ENHANCE THE PERCENTAGE OF RATIONAL UTILIZATION OF ANTIBIOTICS

Hui-Yun Liang, Ilg-Ling Chen, Hung-Jen Tang, Bo-An Su.
*Infection Control Committee, Chi Mei Medical Center, Taiwan; bDivision of Infectious Disease, Chi Mei Medical Center, Taiwan; cDepartment of Internal Medicine, Chi Mei Medical Center, Taiwan*

Purpose: The rational use of antibiotics and the drug resistance of bacteria are undoubtedly important global health issues. Many studies indicated that antibiotic abuse in outpatient clinics is the main reason for the occurrence and distribution of bacterial drug-resistance in the community. However, considering the timeliness of prescriptions in outpatient clinics, the preview of antibiotic prescription is rather difficult. Therefore, the management and post review mechanism of antibiotic prescriptions in outpatient clinics are extremely crucial.

Methods: Our hospital has developed warnings and restrictions for antibiotic prescriptions in the outpatient clinic prescription system in order to alert and control prescribing antibiotics by requesting enclosed information such as medication reasons, relevant inspection reports and the reading of body weight. In addition, the reasons for antibiotic utilization shall be indicated comprehensively in the chart. If it is a simple common cold or virus infection, it is not permitted to prescribe antibiotics.

Results: To date, after establishing the management and review mechanisms, the statistics regarding the percentage of rational antibiotic utilization in outpatient clinics has shown a gradual upward trend, and the prescription rate remains at about 5.9%. From here, we can see the effectiveness of management is significant.

Conclusions: Infection specialists shall conduct randomized inspections regarding the rationale of antibiotic utilization, duration of administration, and lesion sites and types. Comments from the reviewers will be forwarded to the physician who described the antibiotics in order to achieve the objectives of mutual communication and education.

LOCAL SURVEILLANCE OF ANTIMICROBIAL CONSUMPTION AND ANTIMICROBIAL RESISTANCE IN FUKUOKA CITY IN JAPAN FROM 2010 TO 2012

T Yamada a,b, Y Morokuma a,b, M Kiyosuke a,b, S Yasunaga a,b, M Hitomi a,b, K Toyoda b, H Nishio a,b, T Yano b, R Ogawa b, S Masuda b, N Shimoto a,b
*Center for the Study of Global Infection, Kyushu University Hospital, Fukuoka, Japan; bDepartment of Pharmacy, Kyushu University Hospital, Fukuoka, Japan; Department of Clinical and Laboratory Medicine, Kyushu University Hospital, Fukuoka, Japan*

Purpose: We have organized infection control network in Fukuoka district. Through this network, we have shared information about infection control affairs. In this study, in order to promote antimicrobial stewardship in the whole district, we surveyed consumption of antimicrobials and rate of resistant bacteria and studied the relationship between them.

Methods: From 2010 to 2012, antimicrobial consumption and the rate of resistant bacteria were collected from 9 hospitals (200-1,275 beds) retrospectively. Antimicrobial consumption was calculated based on anatomical therapeutic chemical/defined daily dose (ATC/DDD) proposed by WHO. Resistant rate of Pseudomonas aeruginosa was calculated based on the criteria of M100-S19 of CLSI 2009. We did correlated analysis between carbapenem consumption and the rate of meropenem (MEPM) resistant P. aeruginosa. We also analysed correlation between consumption of carbapenems, 3rd-generation cephems, 4th-generation cephems, quinolones, tazobactam/piperacillin and the rate of ESBL-producing Escherichia coli.

Results: In these hospitals, the median consumption of carbapenems, 3rd-generation cephems, 4th-generation cephems, quinolones, and tazobactam/piperacillin were 25.8, 28.1, 10.3, 8.5, and 10.2 (DDDs/1000 bed days), respectively. The values in all but 4th-generation cephems have increased year by year. The median rate of MEPM-resistant P. aeruginosa in 2012 was 11.5%, which had not increased over time. On the other hand, the median rate of ESBL-producing E. coli was 21.7%, which had increased. No correlation between carbapenem consumption and the rate of MEPM-resistant P. aeruginosa was observed, while we could find significant correlation between carbapenem and quinolone consumption and the rate of ESBL-producing E. coli.

Conclusions: It has become possible to grasp the trend of antimicrobial consumption and the rate of drug resistant bacteria in Fukuoka City. The rate of ESBL-producing E. coli was higher in the hospital where the consumption of carbapenems and quinolones was high.

A REGIONAL TEACHING HOSPITAL ANTIBIOTICS MANAGEMENT AND ANTIMICROBIAL RESISTANCE TRENDS

Miao-Chi Peng, Liang-Yi Wu, Min-Yeh Peng. aArmfulcare Hospital; bTaipei Tzuchi Hospital, Taiwan

Purpose: Since the advent of antibiotics in 1940, succeeded in reducing the incidence and mortality of many infectious diseases. But, increased substantially in recent years, the occurrence of emerging infectious diseases and pathogens for antibiotic resistance. So that physicians have a more cautious use of antibiotics cognitive. However, the most important factor leading to increased resistance to abuse and inappropriate use of antibiotics.

Methods: Court to review the use of antibiotics, including (1) online control antibiotic use review, (2) non-regulatory antibiotic use review and hospitalization rates of antibiotic NHL pumping audit inspection, (3) clean surgical antibiotic prophylaxis statistical anomaly review (first dose administration time abnormal rate, use more than 24 hours after the extraordinary ratio), (4) outpatient and emergency antibiotics review, (5) anti-drug bacteria incidence regularly (monthly, six months, year) statistical analysis review.
Results
2013 online review of inpatient antibiotic approved withdrawal rate (4.12%) lower than 2012 (4.69%). Batch reason to retire ‘should be used first-line antibiotics’ the majority. Non-regulatory irrational use of antibiotics, hospital pumping rate in 2014 Q1: 13.5% more than 2013 Q4. Analyze the reasons for a ‘long time’ majority. Conference resolution, hospital antibiotic single opening set number of days from 14 days to 7 days. Preoperative first time an abnormal rate of administration: 6.2% (10/161) in May 2014, compared with the previous two months rose. After long use of > 24 hours ratio: 12.4% (20/161) in May 2014, compared with the previous two months rose.

Conclusions: 2012 and 2013 of isolation rate of resistant bacteria found in the statistical analysis, ORSA, VRE, CRAB, CRKP isolated rate of decline (Figure 1). CRPA separation rate rose because the patients are mostly respi- rator users and more patients into nursing homes or other respiratory care units. CRPA the same in 2014. Of antibiotics by hospital management experience sharing, let rationalize antibiotic use even more robust mechanism.

EVALUATE THE MOST APPROPRIATE ORAL ANTIBIOTICS FOR TREATING BACTERIAL INFECTIONS OF RESPIRATORY TRACT IN SOUTHERN TAIWAN
Yi-Chu Lo, Chin-Lu Chang. Committee of Infection Control, Tainan Municipal Hospital, Tainan, Taiwan

Purpose: In theory, Streptococcus pneumoniae and Haemophilus influenzae are the most important pathogens resulting in bacterial infections of respiratory tract; hence, empirical oral antibiotic should have activity against both. In clinical practice, amoxicillin, amoxicillin-clavulanate, and levofloxacin are most frequently used. This study was conducted to explore which is the appropriate empiric antibiotic among these three oral antibiotics.

Methods: This was a retrospective study in a regional hospital in southern Taiwan. From May 2012 to April 2014, all S. pneumoniae and H. influenzae reported from clinical microbiology laboratory were enrolled. Antimicrobial susceptibility testing was performed by using the Phoenix system (BD, Sparks, MD, USA) for S. pneumoniae and a standard disk diffusion method for H. influenzae. The results were interpreted according to the criteria recommended by the Clinical Laboratory Standards Institute. All intermediate results were regarded as resistant in this study.

Results: A total of 40 isolates of S. pneumoniae and 73 isolates of H. influenzae were enrolled. Of all isolates of S. pneumoniae, the susceptibility rates of amoxicillin, amoxicillin-clavulanate, and levofloxacin were 67.5% (n = 27), 67.5% (n = 27), and 75% (n = 30), respectively. Of all isolates of H. influenzae, those were 27.4% (n = 20), 82.2% (n = 60), and 49.3% (n = 36), respectively.

Conclusions: As a result of this study, oral amoxicillin-clavulanate had a higher susceptibility rate for H. influenzae. In addition, three antibiotics had a similar susceptibility rate for S. pneumoniae. Accordingly, among the three oral antibiotics, oral amoxicillin-clavulanate may be the appropriate empiric antibiotic for treating bacterial infections of respiratory tract in southern Taiwan.

ENDOPHYTIC BACTERIA SHOWED INHIBITION BIOFILM ACTIVITY AGAINST ENTEROTOXIGENIC ESCHERICHIA COLI
S. Magdaelena, Shanny, A. Yulandi, D. E. Waturangi. Faculty of Biotechnology, Atma Jaya Catholic University of Indonesia, Jenderal Sudirman 51, Jakarta 12930, Indonesia

Antibiotic stewardship
Purpose: Bacterial biofilm can develop producing chronic infections. Enterotoxigenic Escherichia coli (ETEC) is one of the important pathogens that causing gastrointestinal infections. New treatment that focus on a biofilm approach, could serve as an alternative strategy to conventional procedures. The aims of this study to characterize endophytic bacteria from Indonesian herbal plants for their in vitro antibiotic activity against ETEC alone or in combination with nalidixic acid.

Methods: The crystal violet assay was used to screen and determine the inhibitory effect of crude extracts on biofilm of ETEC. Identification using 165 rRNA gene and DNA sequencing analysis were used to characterize of endophytic isolates.

Results: A total of 28 supernatants of endophytic bacteria were found to exhibit against ETEC biofilm. The result demonstrated that four isolates (AF3, BELF3 BELF5, AF2) had the highest activity to inhibit the biofilm. Supernatants of AF3, BELF5, and AF2 isolate had polysaccharide as the bioactive compound, whereas BELF3 had nucleic acid and polysaccharide as bioactive compound. AF2 showed similarity with Staphylococcus haemolyticus, AF3 showed similarity to Citrobacter freundii, BELF3 showed similarity to Bacillus subtilis, and BELF5 showed similarity to Escherichia hermannii.

Conclusions: Current study for the first time shows inhibition biofilm activity of Staphylococcus sp., Citrobacter sp., and Escherichia sp. from endophytic bacteria. Further evaluation is needed to determine whether these novel findings can be used in treating biofilm infections.