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RESEARCH POSTER ABSTRACTS – SESSION I • MONDAY, 3 SEPTEMBER: 8:30AM-8:30PM

(15.7%, 6.67 DDD/TID), lansoprazole (15.4%, 6.53 DDD/TID) and ranitidine (10.6%, 4.51 DDD/TID). **CONCLUSIONS:** Besides the quantity, the pattern of use of medicines for peptic ulcer and gastroesophageal reflux disease showed differences between observed countries. Differences in prescription regulations, price and reimbursement most likely influenced the type and amount of medicines consumed.

PHP20: REAL-WORLD UTILIZATION PATTERN OF BIOLOGICS IN RHEUMATOID ARTHRITIS: A POPULATION-BASED STUDY

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OBJECTIVES: In November 2011, Center for Drug Evaluation completed the project which aimed to re-evaluate the currently reimbursed biologics for rheumatoid arthritis (RA), and to establish the evidence-based revision rules of reimbursed items covered by National Health Insurance (NHI). As part of the project, this study analyzed the NHI claim data to capture the utilization and prescription pattern of reimbursed biologics in adult patients. **METHODS:** Identity-encrypted claims data, including inpatient, ambulatory care and contracted pharmacies prescriptions, during 2001 to 2010 were utilized. All records with etanercept, adalimumab and rituximab were identified in the first step. Then the records were further separated into RA and non-RA usage, according to the diagnosis codes. Moreover, the RA patients who were newly treated with biologics were enrolled to assess long-term prescription pattern. We performed both Kaplan-Meier analyses to assess biologics switching over time and medication possession rates to evaluate medication compliance. **RESULTS:** The expenditure of biologics for RA patients increased rapidly in the past decade and came to NT\$ 1.37 billion in 2010. Among 5,142 patients treated by biologics in 2010, 88% received etanercept or adalimumab, and 12% received rituximab. In prescription pattern analysis, rituximab was not reported due to lack of long-term data (reimbursed for RA since November 2008). A total of 3,928 and 1,508 patients initiated by etanercept and adalimumab were analyzed, separately. About 34% of etanercept subjects appeared switching over 85 months and 27% of adalimumab subjects applied second biologics over 45 months. The mean durations of continuous prescription were 29 months and 14 months, and the medication possession rates were 78% and 93%, respectively. **CONCLUSIONS:** Under current reimbursement rules, the persistence and compliance of biologic for RA patients were satisfactory. However, the increasing numbers of patients and biological alternatives might intensify the financial pressure on NHI.

PHP21: DOES NATIONAL ESSENTIAL MEDICINE SYSTEM IMPROVE RATIONAL DRUG USE IN PRIMARY HEALTH CARE FACILITIES? AN EMPIRICAL STUDY IN RURAL CHINA

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OBJECTIVES: To examine the effect of National Essential Medicine System (NEMS) on rational drug use (RDU) in primary health care facilities in rural China and to provide reflections and policy implications for currently implemented new health care reform. **METHODS:** Data was obtained from 151 township hospitals in four provinces by means of field survey (stratified random sampling) conducted between 2010-2011. Indicators of RDU were compared before and after NEMS, and discussed in regard to WHO Standard Guidelines or data from other researches. **RESULTS:** Under NEMS, average number of drugs per encounter decreased from 3.64 to 3.46 ($p < 0.01$). Little effect was found in the average number of antibiotics per encounter, but the percentage of encounters with antibiotics prescribed decreased from 60.26% to 58.48% ($p < 0.01$). The percentage of encounters with injection prescribed and the percentage of encounters with hormone prescribed also decreased and the current proportion was 40.31% and 11.16%, respectively. But unfortunately all the above values remained higher than WHO international standards. The percentage of drugs prescribed from National Essential Drug List increased from 63.33% to 79.89% ($p < 0.01$). The average expenses per encounter increased from RMB 25.77 to 26.71 with the available data, but was not significant ($p = 0.362$) and warranted further investigation. **CONCLUSIONS:** The implementation of NEMS has greatly improved rational drug use in primary health care facilities in rural China. But the over-prescription of antibiotics and injections and polypharmacy remain common. Treatment guidelines should be established and closely adhered to. Continuing medical education on RDU for both health workers and the public as well as intensive support supervision are the essential actions taken.

PHP22: OFF-LABEL USE OF INTRAVENOUS NON-STEROIDAL ANTI-INFLAMMATORY DRUGS-KETOROLAC IN A NATIONALLY REPRESENTATIVE POPULATION

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OBJECTIVES: Emerged evidence has linked non-steroidal anti-inflammatory drugs

(NSAIDs) to cardiovascular adverse outcomes. Specifically, parenteral NSAIDs such as ketorolac were associated with higher risk of adverse outcomes than oral ones. Recent policy concern has therefore focused on the rational use of parenteral NSAIDs. Using 2000-2009 Taiwan's National Health Insurance research database (NHIRD), the objective of this study was to provide an estimate of off-label use of ketorolac in a nationally representative sample. **METHODS:** Inpatient ($n = 303,733$) and outpatient prescriptions ($n = 605,750$) of parenteral ketorolac from 2000 through 2009 were identified from a random sample of 1,000,000 individuals in NHIRD in 2005. Ketorolac prescribing outside the indications approved by the Taiwan Food and Drug Administration (i.e. short term use (≤ 5 days) for postoperative pain) was defined as off-label use. Differences in patient and prescriber characteristics between licensed and off-label prescriptions were assessed with chi-square tests for categorical variables and t-tests for continuous variables. **RESULTS:** Off-label use of ketorolac was estimated to be 28.5% at the inpatient settings. The off-label use was more frequent at the outpatient settings (90% of the outpatient prescriptions), with the highest proportion of off-label use among pediatric patients (< 6 years old) (97.2%, 6-18 y/o: 95.8%, 18-65 y/o: 95.1%, and > 65 y/o: 94.7%). Approximately 50% of the outpatient off-label prescriptions of ketorolac came from metropolitan hospitals. Also, the majority of the outpatient off-label prescriptions of ketorolac were prescribed by the emergency departments. **CONCLUSIONS:** Our results suggest that the actual extent of off-label use of ketorolac could be very high, especially at the outpatient settings. It highlights the need for a better understanding of the reasons behind this phenomenon, a more appropriate definition of the role of ketorolac in pain managements, and a more efficient policy intervention to rationalize the use of ketorolac.

PHP24: ASSESSMENT OF THE IN EXCESS NHI-COVERED MEDICATIONS OF OUTPATIENTS IN A 2000-BED MEDICAL CENTER IN TAIWAN

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OBJECTIVES: To evaluate the extent of excess NHI-covered medications in China Medical University Hospital (CMUH), as the surrogate indicator of inappropriate prescribing and medication practices. **METHODS:** Those patients who have visited outpatient units in CMUH³ for 50% of all outpatient visits were assigned as CMUH-loyal patients by Bureau of NHI in Taiwan. They have received Integrated Medical Care (IMC) services in CMUH since December 2009. Patients who have visited outpatient units in CMUH, including those in IMC services, were encouraged to recycle their excess prescription medications to the Department of Pharmacy and learn about proper medication use and its disposal during July 2011 to February 2012. Those retrieved prescription medications were classified based upon the clinical applications and checked for their reimbursed cost using information obtained from the Bureau of NHI. The differences during implementation period between IMC service group and usual care (UC) group were compared using Chi-squared test and t-tests. **RESULTS:** While 32 patients in IMC group and 15 in the UC group recycled their excess medications, more patients in the IMC group had coronary artery disease ($p = 0.03$). Although IMC group have made more outpatient visits significantly than UC group (29 ± 24 vs. 9 ± 9 , $p = 0.004$), their inpatient visits in CMUH were similar. The average pill counts were 433 ± 119 versus 223 ± 60 ($p = 0.03$) and cost of excess prescription medication were $2,219 \pm 607$ versus $2,126 \pm 595$ NTD in IMC and UC group, respectively. While HTN, DM and hyperlipidemia were the three major diseases in both groups, those agents for cardiovascular disease and DM accounted for 39% and 15% of all estimated cost of excess medication. **CONCLUSIONS:** With the substantial excess, NHI-covered medications for chronic illness among CMUH outpatients, it is necessary to come up with workable strategies to enhance appropriate prescribing and medication use in outpatient units.

PHP25: MARKET ANALYSIS OF ANTIBIOTICS CONSUMPTION IN NORTHERN PART OF IRAN DURING 2001-2010

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OBJECTIVES: Iran's Rational Drug Use Committee (RUD) reported that antibiotic consumption rate has been arisen in the past decade and they were among the top five most used drugs. Irrational use of antibiotics can cause microbial resistance and move a huge part of the government financial support, this research has forward to study about the antibiotic consumption's in Northern states which have around 10% of the whole Iran's population and comparing them with Iran's total consumption to find any significant difference. **METHODS:** A total of 161 antibiotics are in Iran's drugs list. According to Iran's FDO regulations all pharmaceutical

companies should... Sales amount... method, each... dose /1000 Inha... each states. RE... in Northern sta... antibiotics, four... 0.693), Cephalo... (0.897 vs. 0.9)... (-0.836 vs. -0.7... -0.943). In pare... Imipenem 0.96... significant desc... (-0.809 vs. -0.94... pattern of whole... priority in trainin... Northern states'

PHP26: CONSIDERATIONS ON THE USE OF ANTIBIOTICS IN SERBIA

Pavlovic N¹, Stajic Z¹, Mikov M¹, Montenegro, ²Faculty of Medicine, Serbia and Montenegro

OBJECTIVES: The aim of our study was to compare the rational and non-rational use of antihyperglycemic drugs in observational, population-based study as DDD per 1000 inhabitants were used at a rate of 51.2% of total (A10BB), as a second-line drug in Croatia, sulfonamide New medicinal products were used at a rate of 0.002 DID in Serbia. antidiabetics between especially with re...

PHP27: THE EFFECT OF RETIREMENT ON DRUG CONSUMPTION

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OBJECTIVES: To study investigated retirement for sedentary cohort study with a sample containing from 1999 to 2005. 50 and 64 were five year before and six year were further stratified daily doses (DDDs) non-retiree controls retiree was assigned her matching retiree to compare the Generalized estimable ratios (ORs) of drug