SESSION I

HEALTHCARE POLICY—Compliance/Adherence Studies

PHP1

COMPLIANCE WITH DRUG TREATMENT IN SWEDEN: AN EPIDEMIOLOGICAL STUDY

Bingefors K, Isacson D

Uppsala University, Uppsala, Sweden

OBJECTIVE: Most studies on medication compliance originate in the medical care setting. In this study the aim was to analyze self-reported compliance with prescription drug treatment in a population.

METHODS: Cross-sectional survey, statistical sample, 20–84 years, in the County of Uppland, Sweden. Those answering the questionnaire totaled 5404 (68%). A recall period of two weeks was used for use of prescription drugs. Logistic regression analysis was used for the multivariate analyses.

RESULTS: The use of prescription drugs was reported by 2604 persons (48.2%). Of these users 63.5% reported that they had on occasion or often forgotten to take their medicines, 20.8% reported that they had changed dosages on their own and 25.5% answered that they had stopped medication on their own accord. Men stopped taking drugs to a greater extent than women; older persons were more likely to continue drug treatment as prescribed. Individuals with a higher educational level and those with a good medication knowledge reported that they stopped taking prescription drugs to a greater extent than others. The same pattern was seen with respect to the changing of dosages. Further, we found that it was less common that users of drugs for hypertension, users of cardiovascular drugs, users of drugs for angina, and users of antibiotics stopped taking drugs on their own accord while it was more common that users of analgesics, and users of hypnotics, anxiolytics and antidepressants stopped taking drugs as compared to other users.

CONCLUSION: This epidemiological study highlights that non-compliance is a public health problem, that there are variations between users of different types of drugs, and that much more research is needed on non-medical and medical factors affecting medication compliance in the population.

PHP2

THE ASSOCIATION OF PRACTICE GUIDELINES AND OTHER FACTORS WITH HOSPITAL LENGTH OF STAY (LOS) AND MORTALITY IN PATIENTS WITH COMMUNITY-ACQUIRED PNEUMONIA (CAP), HEART FAILURE (HF) AND SEDATED INTENSIVE CARE PATIENTS

Bonnet PO1, Chaikledkaew U1, Hopefl A2, Johnson KA1

1University of Southern California, Los Angeles, CA, USA; 2AmeriNet, St. Louis, MO, USA

OBJECTIVES: To investigate the association of the Joint Commission on the Accreditation of Healthcare Organizations (JCAHO) core performance measures, practice guidelines and other factors with hospital length of stay (LOS) and mortality in patients with community-acquired pneumonia (CAP), heart failure (HF) or sedated intensive care unit (ICU) patients.

METHODS: Data included 2238 patients with CAP, 622 patients admitted to the ICU and 1340 patients with HF, from 88 hospitals during a 3-month period. Data included patient demographic, hospital characteristics and outcome measures. Univariate and multivariate analyses such as ordinary least square (OLS) and logistic regression were performed.

RESULTS: Based on the results from OLS regression analysis, older age is significantly associated with longer LOS (p < 0.0001) for all conditions. Also, patient admission to hospitals with a care plan (p < 0.0120) and the number of patient co-existing illnesses (p < 0.0016) were significantly related to an increase in LOS. Patients receiving care according to practice guidelines have a significantly shorter LOS. Logistic regression results show that older age (odds ratio, OR = 1.029, p < 0.0001) and male gender (OR = 0.701, p < 0.0036) were significantly associated with higher mortality. Compliance with practice guidelines had a significant impact on decreasing mortality regardless of conditions.

CONCLUSIONS: Compliance with practice guidelines may reduce LOS and mortality, which suggests improved patient outcomes and decreased healthcare costs.

PHP3

THE EFFECT OF HOSPITAL COMPLIANCE WITH THE JOINT COMMISSION ON THE ACCREDITATION OF HEALTHCARE ORGANIZATIONS (JCAHO) PERFORMANCE MEASURES AND PUBLISHED GUIDELINES ON OUTCOMES OF PATIENTS WITH HEART FAILURE

Chaikledkaew U1, Hopefl A2, Chen SW1, Bonnet PO1, Johnson KA1

1University of Southern California, Los Angeles, CA, USA; 2AmeriNet, St. Louis, MO, USA

OBJECTIVES: To evaluate the effect of hospital compliance with the Joint Commission on the Accreditation of Healthcare Organizations (JCAHO) core performance measures and published guidelines on outcomes of patients with heart failure.

METHODS: Data included 2238 patients with heart failure admitted to hospitals in a 3-month period. Data included patient demographic, hospital characteristics and outcome measures. Univariate and multivariate analyses such as ordinary least square (OLS) and logistic regression were performed.

RESULTS: Based on the results from OLS regression analysis, older age (odds ratio, OR = 1.029, p < 0.0001) and male gender (OR = 0.701, p < 0.0036) were significantly associated with higher mortality. Compliance with practice guidelines had a significant impact on decreasing mortality regardless of conditions.

CONCLUSIONS: Compliance with practice guidelines may reduce LOS and mortality, which suggests improved patient outcomes and decreased healthcare costs.
OBJECTIVES: Compliance with heart failure treatment guidelines may improve quality of care and reduce healthcare utilization and costs. For accreditation purposes, hospitals are required by the Joint Commission on the Accreditation of Healthcare Organizations (JCAHO) to measure performance for treatment of patients with heart failure. The purpose of this study is to determine the effect of hospital compliance with JCAHO performance measures and published guidelines on outcomes of patients with heart failure (HF). METHODS: Thirty hospitals submitted data on 1340 patients admitted with HF between January 2, 2002 and March 30, 2002. The data included patient demographics, HF severity, co-existing illnesses, and type of medication therapy during hospitalization and at discharge. Univariate and multivariate analyses such as ordinary least square (OLS) regression, logistic regression, and Cox regression analyses were applied. RESULTS: Current tobacco use and co-existing illnesses such as cardiomyopathy and chronic renal disease were significantly associated with longer hospital length of stay (LOS). Moreover, patients admitted to community hospitals had a lower inpatient mortality rate. Patients receiving discharge instructions regarding follow-up appointment and weight monitoring had significantly lower hospital LOS and mortality. Overall, patients receiving treatment according to published guidelines had lower hospital LOS and inpatient mortality rate. However, receiving treatment in hospitals with a care plan for HF had no significant impact on LOS or mortality. CONCLUSIONS: Hospital compliance with JCAHO performance measures and published guidelines is associated with a significant reduction in patient LOS or inpatient mortality. However, patients treated in hospitals with a care plan for heart failure had no significant change in LOS or mortality.

BIAS IN CATEGORICAL MEDICATION COMPLIANCE ASSESSMENT
Cramer JA
Yale University School of Medicine, West Haven, CT, USA

OBJECTIVE: To demonstrate the bias inherent in using categorical data for medication compliance assessments. METHODS: Two datasets from studies in which patients used electronic monitors (MEMS, AARDEX, Union City, CA) to record long-term daily dosing were used for analyses comparing categorical compliance (>50%, >60%, >70%, >80%, >90%). Study A compared an intervention to improve medication compliance with a usual care control group in a study of Medication Usage Skills for Effectiveness Program (MUSE-P) (Cramer, J Nerv Ment Dis, 1999). Study B assessed compliance as a covariate to medication efficacy (Krystal, Cramer, NEJM, 2001). RESULTS: In Study A, analysis by categories of >50%, >60%, >70%, >80%, and >90% compliance rates provided different results for the comparisons between the intervention and control groups. The proportions of intervention and Control group patients who would have been considered compliant were 90–87%, 85–71%, 77–61%, 64–34%, 54–24%, respectively by category. Differences between the intervention and control groups increased with higher standards of compliance (ratios 1.06, 1.22, 1.30, 1.92, 2.33). In Study B, decreasing proportions of patients met criteria for compliance categories (56%, 50%, 44%, 35%, 26%, respectively). Changing categories affected regression models with the primary outcome. CONCLUSIONS: This exercise demonstrated the biases that occur when compliance is calculated by category because of lack of information to support selection of a category designating appropriate compliance. Information that would define a category below which a medication is ineffective is available for very few medications. Without such information, selection of a category as a determinant of medication compliance is inappropriate. This problem was removed by using continuous compliance data.

CORRELATIONS BETWEEN A STAGE OF CHANGE MEASURE AND FOUR VALIDATED MEASURES OF MEDICATION COMPLIANCE
Cook CL, Perri III M
University of Georgia, Athens, GA, USA

OBJECTIVES: The literature contains a plethora of articles on medication compliance research, however, no “gold standard” in the measurement of compliance has been established. The Stage of Change (SOC) construct measure from the Transtheoretical Model of behavioral change has recently been validated in medication compliance. The objective of this study is to compare the SOC measure against Four other validated compliance measures in patients being treated for diabetes, hypertension, hypercholesterolemia, hypothyroidism, and hormone replace therapy. METHODS: A total of 171 male and female patients in five primary care physician offices in the state of Georgia, USA, completed a face-to-face questionnaire consisting of the SOC measure, the Medication Adherence Scale, the Medication Outcomes Survey (MOS) compliance question, the Brief Medication Compliance Questionnaire (BMQ) and sociodemographic information. Pharmacy refill records (RR) were collected as the fifth compliance measure. RESULTS: Pearson correlations ranged from a low of 0.09 between RR and BMQ to a high of 0.79 between SOC and MOS. All other correlations ranged between 0.20 and 0.49. All correlations proved significantly different than zero (p < 0.05) with the exception of the RR and BMQ correlation. CONCLUSIONS: The majority of correlations between validated measures of compliance ranged from weak to moderate in strength. Therefore the results of this study show selection of a useful compliance measure is difficult. The study findings emphasize that assessing medication-taking behavior of patients and comparing the results of different compliance studies is problematic. The develop-