

PIN55 VALIDATING LIKERT-TYPE MEASURES USING NONPARAMETRIC AND PARAMETRIC ITEM RESPONSE THEORY

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OBJECTIVES: Item response theory (IRT) is one of measurement models used for evaluation of the quality of rating scale measures in health outcomes research. Kernel regression on item response theory (KIRT) is a nonparametric IRT alternative to common approaches derived from the classical test theory and parametric IRT (e.g., Rasch) models. The objectives of this study were to identify and compare the agreement and discrepancy in item quality assessment using nonparametric and parametric IRT. **METHODS:** KIRT and Rasch approaches were utilized to examine psychometric properties towards Likert-type measures assessing pharmacists' performance of patient counseling in general (PC-G) and counseling on herbs and dietary supplements (PC-HDS), in a large-scale validation study. Agreement and discrepancy of item performance assessment were examined based on the underlying attributes of models, corresponding analysis techniques and assessment criteria (e.g., examining violations of unidimensional psychometric theory assumptions for KIRT, examining the undesired discrepancy between observed and model expected values for Rasch model). **RESULTS:** Seven out of 10 PC-G items (70%) and six out of seven PC-HDS items (86%) were good quality items based on both approaches. Two good quality items in the KIRT model did not fit the Rasch model well (i.e., outfit ZSTD „d „n„b 2„n), whereas the three good fitting items in the Rasch model were recognized as poor quality items in the KIRT model (violated monotonicity or local independence). **CONCLUSIONS:** There was fair amount of agreement between the two approaches with retrospect to validate performance measures. The discrepancy of two approaches resulted from the differences between corresponding measurement models and the pre-specified criteria for quality assessment. In particular, the KIRT tended to identify poor quality items that didn't intuitively match unidimensional psychometric properties, but the Rasch approach tended to identify poor quality items which might belong to a second construct.

PIN57 FACTORS AFFECTING CHOICE OF ANTIBIOTIC USE IN ACUTE BACTERIAL RESPIRATORY TRACT INFECTIONS: A SURVEY IN THAI PHYSICIANS

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OBJECTIVES: To examine physicians' attitude towards factors and their relative importance affecting antibiotic prescribing for ambulatory adult patients with acute bacterial RTIs; acute rhinosinusitis (R), community acquired pneumonia (CAP), pharyngitis (P), exacerbation of chronic bronchitis (B). **METHODS:** The Internal medicine, ENT, Chest medicine, and Infectious physicians were selected to be our respondents. Based on a list of registered medical practitioners we only selected those who worked in Bangkok (251 physicians). During August- September 08, we went to see them at their practice settings and asked them to participate in the study. Finally, there were only 121 physicians who participated in our survey. **RESULTS:** Total respondents were internal medicine (28.9%), ENT (27.3%), Chest medicine (26.4%), and infectious (17.4%). Most of them were male (74.4%) and worked in private hospitals (53.7%). Among the 4 diseases, they reported that the highest volume of patients were seen in the P, followed by R, B, and CAP. Drug efficacy was reported to be the most important factor affecting the physicians' decision on antibiotic choice across all specialties, followed by disease severity, drug side effect, total treatment cost, and ease of use, respectively (mean rank = 1.28, 2.64, 3.60, 5.31, 5.44). Drug resistance and experience of use were viewed similarly as the subsequent imperative aspects for antibiotic selection (mean rank = 5.7 and 5.8). **CONCLUSIONS:** In acute bacterial RTIs, the drug efficacy and disease severity were found to be the most important factors affecting the physicians' choice of antibiotic, whereas drug resistance was reported less significant. To ensure effective use of antibiotic in acute bacterial RTIs infection, the drug knowledge and evidence in varied severity stages are essential, the local recent data on drug resistance should be more well noted for practicing physician in order to increase their awareness on this issue.

PIN58 DRUG UTILIZATION PATTERNS AND COSTS OF ANTIBIOTIC THERAPY AMONG PATIENTS WITH OR WITHOUT CANCER IN A 2000-BED MEDICAL CENTER IN TAIWAN

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OBJECTIVES: Inappropriate antibiotic consumptions in hospitals persists as one of patient safety concerns in Taiwan despite many efforts and health policies to address this problem. We performed a secondary data analysis to describe and compare the utilization and cost of systematic antibiotic therapy in the management of infections among patients with (CApt) or without cancer (NCApt) for quality improvement of medical care. **METHODS:** The claim data of antibiotic prescription and corresponding cost from the 2000-bed medical center affiliated to a medical university in Taiwan were analyzed. Examining the trends and differences of antibiotic cost among CApt and NCApt during hospitalizations in years of 2005 and 2006, the 95% confidence intervals of antibiotic cost and relative weight of diagnosis-related group for NCApt

were compared monthly. In the first half of year 2007, the months with average cost of antibiotics greater than the breakpoint, which was derived from the prior two-year analysis, were selected to further identify the principle diagnoses and antibiotics needed to have special attention. **RESULTS:** There were statistically significant higher average antibiotic costs of CApt than of NCApt in July, August and October, 2005 and in January, April, May and July, 2006. Given the NTD 15,500 (USD = -455) was recognized as breakpoint of average antibiotic cost for cancer patients in 2007, visits hospitalized in May due to receiving radiotherapy, chemotherapy, management for acute myeloid leukemia, cervical cancer and so on should be paid more attention on infection management. Ten parenteral antibiotics (e.g., Tazocin, Targocid), accounted for 89.64% of total antibiotic costs in May, were selected for rigorous controlled dispensations in the second half of year 2007 and later. **CONCLUSIONS:** Sustained control efforts focusing on those visits receiving radio- and chemo-therapy and/or using specific extend spectrum antibiotics during hospitalizations are necessary to improve antibiotic use and infection control in hospitals.

RESPIRATORY-RELATED DISORDERS – Clinical Outcomes Studies

SMOKING CESSATION AND ITS PREDICTORS: RESULTS FROM COMMUNITY BASED PHARMACY TOBACCO CESSATION PROGRAM IN NEW MEXICO

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OBJECTIVES: 1) To assess tobacco quit rates among a convenient sample of current smokers who participated in the community pharmacist-based program, and 2) to identify the predictors of quitting over a 6-month period among the study population. **METHODS:** Each year approximately 200 patients were enrolled across 15 pharmacies throughout New Mexico. Pharmacists, who had received the Rx for Change training, provided the cessation program with administrative and clerical support from the Pharmacy Technicians. Patients were provided counseling services at no charge and, if necessary, received medications without charge. Patients did not receive any monetary compensation for participation. Data on patient's demographic information, smoking status, and readiness for quitting was collected at the initial enrollment. Data on smoking status was collected at 1, 3, and 6 months. Statistical Analysis: Missing data on follow-up was imputed using the last observation carry forward method. Smoking cessation rates were calculated at 1, 3, and 6 months. Multiple Logistic regression analysis was performed to assess predictors of quitting. Standard errors were adjusted for repeated observation. **RESULTS:** Final sample size was 346 participants. The average quit rate at the end of 6 months was 25%. Significant predictors of quitting were high confidence levels in quitting at baseline (OR = 2.628; p = 0.000), individuals who had their first cigarettes at least 30 minutes after waking up, first cessation attempt, and non-white patients were more likely to quit. **CONCLUSIONS:** Smoking cessation program delivered through trained community pharmacists is an effective approach in reducing smoking. Future research should be conducted to compare the effectiveness of pharmacists with other providers of tobacco cessation services.

DOES ADD-ON EVENING DOSE OF FORMOTEROL IMPROVE LUNG FUNCTION FOR COPD PATIENTS RECEIVING FIXED-DOSE OF TIOTROPIUM AND FORMOTEROL?

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OBJECTIVES: To investigate change in lung function after 24 hours when an evening dose of formoterol is administered to chronic obstructive pulmonary disease (COPD) patients after a morning dose of tiotropium + formoterol. Guidelines recommend treatment with mono or combination of long-acting bronchodilators for COPD. Recently, daily fixed-dose combination of tiotropium + formoterol has been used to treat COPD. Tiotropium has 24 hour duration of action, whereas the effect of formoterol wears off after 12 hours. An add-on evening dose of formoterol may be required to retain the additive effect of the combined dose. **METHODS:** A double-blind, placebo controlled randomized study of three groups of 20 mild to moderate COPD patients was conducted. Group A received morning dose of tiotropium; group B received tiotropium + formoterol; and group C received tiotropium + formoterol, followed by formoterol inhalation after 12 hours. Lung function was observed at baseline, 0.5, 2, and 12 hours after the morning dose. After 12 hours, evening dose of either placebo (group A and B) or formoterol (group C) was given and parameters were recorded at 12:30 and 24 hours. **RESULTS:** After 30 minutes, tiotropium alone improved lung function (FEV1 and FVC) until 24 hours. Tiotropium + formoterol improved lung function at 30 minutes. This improvement increased with time till 12:30 hours. After 24 hours, lung function was same as that observed after 12 hours. Add-on dose of formoterol after 12 hours did not improve lung function at 24 hours. However, add-on evening dose of formoterol enhanced the lung function for mild COPD patients (n = 5) but not for moderate COPD patients (n = 15). **CONCLUSIONS:** Addition of formoterol to tiotropium was beneficial. No improvement was associated with add-on formoterol dose except among patients with mild COPD who showed significant improvement in lung function. A larger study is needed to replicate this finding.

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