of 0.68–0.88. Scores correlated significantly with frequency of migraines in the past month and use of prophylactic medications daily (both $p < 0.0001$). Correlation of the QOLWM and HDI total scores for the 728 people who completed both questionnaires was 0.73. Item correlations with the HDI total score were 0.47–0.67, demonstrating external criterion validity. Additional studies are ongoing to assess reproducibility and responsiveness.
CONCLUSIONS: These data demonstrate the psychometric properties of the QOLWM. The brief questionnaire may be useful as a screening tool for clinicians to evaluate the impact of migraine on individuals. The two-dimensional approach to patient-reported quality of life allows individuals to weight the impact of both frequency and bothersomeness of chronic migraines on multiple aspects of daily life.

SR4

LONGITUDINAL ASSESSMENT OF ASTHMA AND WORK OUTCOMES

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OBJECTIVE: Describe relationships between changes in work outcomes (WO) and changes in asthma severity over a one-year period.
METHODS: This longitudinal study surveyed adults enrolled in a managed care organization using identical mailed surveys. 106 respondents completed both the 1997 and 1998 questionnaires and reported working outside the home. Self-reported WO included missed work days due to asthma and work performance (WP) from the Functional Status Questionnaire, a 6-item scale using a 4-point Likert scale, transformed to a 100 point scale. A 4-week time reference was used. Perceived severity was determined by asking patients their perceived severity on a 5-point scale from very mild to very severe; evaluated severity was based on reported symptoms matched to national guidelines. Respondents were grouped by change in asthma severity: improvement; no change; or decline of at least one severity category. Analysis included descriptive statistics, paired Student's t-test, and McNemer's test.
RESULTS: Initially, respondent's mean age was 44.4 ($\pm$10.9) years; 72 (68.6%) were female; 76.7% had an annual family income of $\geqslant$\$40,000; 96.2% were Caucasian; and 76.4% had some college education or more; 42.9% perceived their asthma severity as very mild or mild, 38.1% moderate, and 19.1% as severe or very severe. Based on symptoms, 32.4% were classified as intermittent mild, 28.6% mild persistent, 36.2% moderate, and 2.9% severe asthma. WP scores changed in the expected direction based on changes in asthma severity: no change in perceived severity ($n = 58$) had no significant change in WP score (91.3 ± 13.0 versus 92.9 ± 12.4, $p = 0.52$); improvement in perceived severity (less severe, $n = 17$) had improved WP scores (91.8 ± 7.9 versus 94.4 ± 9.4, $p = 0.30$); and worsening of perceived severity ($n = 26$) had a decline in WP score (94.4 ± 8 versus 91.3 ± 10.9, $p = 0.07$). WP score trends were similar based on evaluated severity. There were no significant differences in changes in the number of respondents who reported missing work.
CONCLUSIONS: Changes in WP are related to asthma severity. The measure of missed days work is less consistently related.

SR5

MEDICAL EVENTS AND RESOURCE UTILISATION IN CANCER PAIN PATIENTS TREATED WITH STRONG OPIOIDS: AN ANALYSIS OF THE UK-GPRD DATABASE

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OBJECTIVES: To study the incidence of medical events and resource utilisation in patients treated for severe cancer pain with strong opioids with the general practitioner (GP).
METHODS: We analyzed data on 2,323 cancer patients who switched from a weak to a strong opioid. Patients started either on TTS Fentanyl (TTS: N = 270), Immediate Release Morphine (IR: N = 1,909) or Sustained Release Morphine (SR: N = 144). We compared the medical events during their pain treatment, the number of patients receiving concomitant medication and the number of GP visits. A descriptive analysis was performed as well as relative risks (RR) calculated, adjusting for relevant co-variates.
RESULTS: The groups were comparable for age (avg. 68 yrs). There were more female patients in the TTS group (61.5%) compared to 48.1% and 49.3% for IR and SR, respectively. Median duration of cancer prior to the start of strong opioids was 7.1 months for TTS, 6 for IR and 5.3 for SR. Mean duration of treatment: 68 days for TTS, 97 for IR and 92 for SR. No differences in concomitant illnesses were observed except for cancer types with significantly more GI and fewer lung cancers in the TTS group. Compared to TTS, patients on IR had more constipation (RR 1.49: 95% CI 1.14–1.94), more nausea and vomiting (RR 1.43: 95% CI 1.09–1.88) and more cardiac events (RR 1.95: 95% CI 1.15–3.29), while SR patients differed from TTS only with respect to cardiac events (RR 2.79: 95% CI 1.49–5.22). IR patients had also a higher rate of hospitalizations (RR 1.95: 95% CI 1.14–3.31) and GP visits (RR 1.21: 95% CI 0.98–1.49). Fewer TTS patients consumed additional pain medication, laxatives as well as antibiotics and CNS medication.
CONCLUSION: This analysis of GP derived observational data indicate that TTS Fentanyl results in a lower consumption of medication and other health care resources compared to morphine treated cancer patients.

ECONOMIC & OUTCOMES STUDY RESULTS OF GASTROINTESTINAL DISORDERS

GI1

COST-EFFECTIVENESS OF THE COMBINATION OF MISOPROSTOL WITH DICLOFENAC IN THE TAYSIDE POPULATION

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OBJECTIVES: To compare observational data with a large clinical study (MUCOSA) which showed that misoprostol reduced NSAID complication rates by 40% in patients with arthritis. To measure the cost of prescribing, endoscopy and hospitalizations for patients receiving nonsteroidal anti-inflammatory drugs (NSAIDs) and estimate the cost-effectiveness of misoprostol in routine practice.
METHODS: A cohort study using all patients in the Tayside region that received NSAIDs and anti-ulcer drugs between 1989 and 1995. Thirty-day treatment was estimated from the cost of the NSAID plus endoscopies plus hospitalization for GI events. Costs of hospitalizations and endoscopic procedures were obtained from Scottish Information and Statistics Division for 1997.
RESULTS: Among 54,807 eligible patients the risk adjusted rates of hospitalization for gastrointestinal diagnoses were 50% lower on Arthrotec (a fixed combination of misoprostol and diclofenac) than on diclofenac alone. Statistically significant risk factors were: a prior history of gastrointestinal events ($p < 0.001$), a prior history of cardiovascular events ($p < 0.001$), increasing age ($p < 0.001$), social deprivation score ($p = 0.072$), concurrent exposure to anti-ulcer drugs ($p < 0.001$) or steroids ($p = 0.001$) and type and dose of NSAID ($p < 0.001$ and $p = 0.047$ respectively). Only nabumatone had a lower event rate than Arthrotec, but at a higher expected cost. Arthrotec had lower 30 day treatment and complication costs than diclofenac alone in high risk patients (e.g., £52 *vs* £86 for a patient aged 80–89 with a prior history of GI events) but not in low risk patients (e.g., £16.50 *vs* £15 for a patient aged 50–59 with no prior GI events).
CONCLUSIONS: There was close agreement between this observational study and the MUCOSA study on the extent to which the prophylactic use of misoprostol reduced NSAID associated gastrointestinal complications. The combination of misoprostol with diclofenac should reduce thirty day treatment and complication costs in high risk patients, in comparison with diclofenac alone.

GI12

COST-EFFECTIVENESS ANALYSIS OF HIGH DOSE IV OMEPRAZOLE INFUSION AS ADJUVANT THERAPY TO ENDOSCOPIC HAEMOSTASIS FOR BLEEDING PEPTIC ULCERS

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OBJECTIVES: To investigate the cost-effectiveness of high dose IV omeprazole as an adjuvant therapy to endoscopic hemostasis for prevention of early ulcer rebleeding from a hospital perspective. A randomized, placebo-controlled clinical trial was conducted previously in a local hospital to study the effects of high dose IV omeprazole infusion on patient outcomes after endoscopic ulcer hemostasis. Although the interim data suggested that IV omeprazole significantly decreased the rate of early rebleeding that occurred 72 hours after therapy, the cost implication of this therapy has not been examined.
METHODS: The data of 157 patients who completed the above study was analyzed. The percentages of patients who experienced early rebleeding were obtained from medical records. The health care resources consumed by each patient during the first 72 hours post endoscopic hemostasis were also retrieved from their records and studied.
RESULTS: Four of 80 (5%) patients in the omeprazole group and 17 of 77 (22%) patients from the placebo group had rebleeding within 72 hrs after endoscopy and required further treatment. The treatment cost within 72 hours post endoscopy of the IV omeprazole group was lower than that of the placebo group (HK$1312 per patient vs. $3223 per patient, 1 US = 7.8 HK). The cost-effectiveness ratios for the omeprazole group and placebo group were $9,946 and $12,821, respectively, per early rebleeding episode prevented.
CONCLUSIONS: High dose omeprazole is more cost-effective in preventing early ulcer rebleeding than placebo after endoscopic hemostasis.

GI13

EVALUATION OF PHARMACISTS' INTERVENTIONS ON PRESCRIBING ERRORS OF NONSTEROIDAL ANTI-INFLAMMATORY DRUGS: COSTS SAVINGS AND CLINICAL EFFECTS

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OBJECTIVES: To determine the economical and clinical impact of pharmacists' interventions in ambulatory care within the context of a prescribing error of Nonsteroidal Anti-Inflammatory Drugs (NSAIDs).
METHOD: A national survey was carried out in 900 town pharmacies during 12 weeks to record all prescriptions with an anomaly like contraindication, interaction which could be dangerous for the patient. We used a decision analysis to compare two strategies, with or without a systematic pharmacist's intervention before a prescription of NSAIDs. The outcome was upper gastrointestinal side effects of NSAID therapy (peptic ulcer and complications) and we used a prescribing errors rate varying between 0,5% to 2% to estimate the costs savings and to measure the occurrence of peptic ulcer avoided. Computer simulation was performed with Tree Age 3.0.
RESULTS: 446 cases of NSAIDs prescription errors were notified including combination of NSAIDs, NSAIDs overdose and NSAIDs prescription with risk factors like peptic