VALIDATION OF A RATING INSTRUMENT ASSESSING THE INHALATION SKILLS OF CHILDREN WITH ASTHMA
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OBJECTIVES: Despite their complexity appropriate use of asthma inhaled medicines is crucial to ensure optimal drug delivery to the airways. We describe the validation of an instrument to assess inhalation skills in children. METHODS: The instrument includes a breakdown of the steps necessary for appropriate inhalation. We videotaped 25 children taking a placebo inhaler (metered dose inhaler (MDI), MDI with AeroChamber® (MDI-AE®), and Diskus®). A gold standard (GS) was developed by agreement of two asthma experts watching the videotaped demonstrations. Twenty-one raters scored the randomly ordered demonstrations twice within a 2-week interval (sessions 1 and 2). Intra-class correlation coefficients (ICCs) were calculated to assess validity (comparing GS to raters’ scores), interrater reliability, and test-retest reliability for each step of the inhalation. RESULTS: ICCs varied considerably by both, the device and the step. In session 1, a small proportion of raters agreed with the GS on whether patients actuated the MDI and inhaled simultaneously (9.5%, ICCs 0.62 to 0.74) and whether patients hold their breath (19%, ICCs 0.62 to 1.00). A better agreement was observed for the MDI-AE® where actuation (43%, ICCs 0.43 to 0.56) and inhalation (57%, ICCs 0.43) are two separate steps. The best interrater agreement was on the shaking of the MDI (ICC = 0.83) and the MDI-AE® (ICC = 0.74). Agreement for the Diskus® was poor for all steps. Results for session 2 were similar. The best intra-rater agreement was for the Diskus® (ICCs = 1 for 5 steps), though only a small proportion of raters agreed on these steps (5% to 21%). CONCLUSIONS: There was large variability within and between raters’ scores. Some steps were better assessed than others. These results suggest that in addition to a detailed instrument, training of raters is crucial to obtain a valid assessment of the childrens’ inhalation technique.
OBJECTIVES: To prospectively evaluate the long-term societal economic and humanistic benefits of acute treatment of AECB with gemifloxacin compared with clarithromycin. METHODS: Patients with AECB were randomized to receive acute, double-blind, double-dummy treatment with either gemifloxacin 320 mg o.d. for 5 days or clarithromycin 500 mg b.d. for 7 days. Patients in US (n=386) and Canadian centers (n=52) were followed for 26 weeks from treatment initiation and the following assessments were made: AECB recurrence requiring antibiotic treatment; respiratory tract infection-related: health care resource utilization, time off and performance at work and usual activities; and health-related quality of life using the St George’s Respiratory Questionnaire (SGRQ). RESULTS: In full sample analysis, significantly more patients who received gemifloxacin remained recurrence free after 26 weeks (73.8% [158/214] vs. 63.8% [143/224]; p=0.024) and were hospitalized less (2.34% [5/214] vs. 6.25% [14/224]; p=0.059). Cost-effectiveness analysis indicated average direct and indirect cost savings of $329 per patient for gemifloxacin vs. clarithromycin. Ninety-five percent confidence intervals for bootstrapped incremental cost-effectiveness ratios ranged from a cost saving of $14,175 to a cost of $8,888 per recurrence-free patient considering all costs. There was an 82.5% probability of gemifloxacin being both cost saving and more effective than clarithromycin from the societal perspective. A greater improvement in total weighted SGRQ score (lower scores being better), adjusted for baseline, was observed for gemifloxacin vs. clarithromycin at 4, 12 and 26 weeks after initiation of acute treatment (43.3 vs. 44.6 [p=0.38], 39.4 vs. 41.8 [p=0.20] and 37.7 vs. 41.0 [p=0.09], respectively). There was significantly less impact on performance at work (p=0.01) and usual activities (p=0.03) at 26 weeks, due to bronchitis, among patients who received gemifloxacin. CONCLUSIONS: Gemifloxacin was very cost-effective from the societal perspective and improved long-term patient outcomes compared with clarithromycin for the treatment of AECB.

HYPOTHETICAL VERSUS REAL WILLINGNESS TO PAY IN THE HEALTH CARE SECTOR: RESULTS FROM A FIELD EXPERIMENT
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OBJECTIVE: Despite increased use in the health care sector (HCS), the contingent valuation (CV) method remains controversial. The nucleus of the controversy is the extent to which hypothetical choices in the CV method mimic real economic choices. Correspondence between hypothetical and real willingness to pay (WTP) has been studied for private and environmental goods. These experiments demonstrate that dichotomous choice (DC) CV questions lead to hypothetical bias (overestimation of real WTP). Hypothetical bias has not been assessed in the HCS. We conducted an experiment directly comparing responses to a DC CV question with real purchase decisions using a pharmacist provided asthma management