PODIUM SESSION II: CANCER OUTCOMES RESEARCH STUDIES

CN1

MODELING THE IMPACT OF TECHNOLOGY DIFFUSION IN BREAST CANCER TREATMENT ON THE COST-EFFECTIVENESS OF MAMMOGRAPHY SCREENING

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OBJECTIVES: The association between treatment advances and dissemination and the cost-effectiveness of cancer screening is largely unknown. This study addressed the above association among breast cancer patients. METHODS: Using a Bayesian micro-simulated Markov model, we followed a hypothetical cohort born in 1960 throughout their lifetimes. We compared no screening strategy to eight mammography screening strategies that consisted of a combination of different initiation age (40 vs. 50), cessation age (74 vs. 79), and frequency (annual vs. biennial) of screening. Upon identifying the most cost-effective strategy, we then applied probabilistic sensitivity analyses (PSA) to explore the impact of different patterns of treatment dissemination on the cost-effectiveness of screening. RESULTS: At the societal willingness-to-pay (WTP) of $50,000 per life year (LY) gained and with the dissemination pattern prior to the availability of trastuzumab, the most cost-effective screening strategy was biennial screening for women aged 50-74. The probability that this strategy was more cost-effective than the no screening strategy was 0.63, followed by biennial screening 50-79 (prob = 0.41), biennial screening 40-79 (prob = 0.08), and biennial screening 40-74 (prob = 0.04). At a WTP of $100,000/LY, the probabilities increased to 0.89, 0.47, 0.69, and 0.72, respectively. Results from the PSA indicated that when adding trastuzumab to the base case dissemination pattern, the probability that the biennial screening 50-74 strategy was more cost-effective than the no screening strategy at a WTP of $100,000/LY decreased from 0.89 to 0.83, and the probabil- ity that the annual strategy was more cost-effective increased from 0.04 (if the optimal dissemination pattern (i.e., all patients with HER2 overexpression received trastuzumab) was achieved. CONCLUSIONS: The finding that improvements in treatment dissemination may paradoxically lead to a reduction in the cost-effectiveness of screening suggests that identifying and designing cost-effective strategies to allocate health care resources across the continuum of care is likely to yield higher gains.

USE OF LATENT VARIABLE AND SURVIVAL MODELING TO ESTIMATE THE ASSOCIATION OF PATIENT-REPORTED OUTCOMES AND PROGRESSION-FREE SURVIVAL IN MALIGNANT PLEURAL MESOTHELIOMA

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OBJECTIVES: The purpose of this study was to conduct joint modeling of latent growth curve models (LGCMs) for patient-reported outcomes (PROs) and survival models for progression-free survival (PFS) to estimate their association in previously-treated patients with advanced malignant pleural mesothelioma (MPM). METHODS: Post-hoc analyses were conducted on PBO and PFS data collected from 243 patients in a phase III randomized controlled trial of best supportive care (BSC) versus pemetrexed-plus-BSC. PFS was a secondary end point in the original study; PRO data were collected using the Lung Cancer Symptom Scale (LCSS). LGCMs were constructed for the nine LCSS items including a treatment covariate; PFS was then regressed onto the growth factors of each LCSS item. RESULTS: There were no statistically significant changes in PRO scores over time as determined by the slope coefficient of the LGCMs. Statistically significant associations were found between PFS and the latent growth factors (intercepts and slopes) of appetite loss, cough, dyspnea, symptom distress, and interference with activity level (p < .05). PFS was significantly associated with the intercept of pain (p < .001), and the slope of global quality of life (p < .001) from the LGCMs; no growth factors were associated with fatigue or treatment. The treatment strategy was not different across the treatment arms. CONCLUSIONS: The model did not converge therefore the association between PFS and hemoptysis cannot be assessed.

PODIUM SESSION II: HEALTH CARE MANAGEMENT STUDIES

CN2

CLINICAL, ECONOMIC, AND HUMANISTIC BENEFITS OF A RHEUMATOID ARTHRITIS DISEASE THERAPY MANAGEMENT PROGRAM

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OBJECTIVES: To evaluate clinical, economic, and humanistic outcomes of a rheumatoid arthritis (RA) disease therapy management (DTM) program designed to improve self-management of injectable RA medication therapy. METHODS: Patient-reported outcomes among patients (N = 171) completing a 7-month RA DTM program were compared from Month 0 to Month 6 using the Short Form-12 (SF-12), Work Productivity Activity Impairment (WPAI), and Health Assessment Questionnaire (HAQ)-Disability (DHI) tools. Propensity scoring was used to match these patients with two non-DTM cohorts who filled injectable RA medications at specialty or retail pharmacies (N = 249 in each cohort). Adherence to injectable RA medication was measured by calculating the medication possession ratio (MPR) over an 8-month pre- and post-period. Among the subgroup of patients with medical claims data in the DTM (N = 46), specialty (N = 35) and retail (N = 32) cohorts, changes in pharmacy, medical, and total health care costs per patient per month (PPPM) were compared from the pre- to post-periods. RESULTS: SF-12 physical component scores significantly increased by 1.1 points (p = 0.048), SF-12 mental component scores were not changed, WPAI work productivity decreased by 10.8% (p = 0.045), and HAQ-DI scores significantly improved by 0.08 points (p = 0.0003). DTM patients had significantly higher medication adherence compared with specialty or retail pharmacy patients (MPR 0.91, 0.83, and 0.61, respectively; p = 0.0001). Median pharmacy costs increased by $25.78, $20.39, and $7.27 PPPM, respectively (p = 0.001 for DTM vs. retail). Total health care services and procedures costs (measured in PPPM, respectively) were $22.48, and $27.22 PPPM, respectively. CONCLUSIONS: Patients completing the RA DTM program experienced increased medication adherence and improvements in SF-12 physical component and HAQ-DI scores, but did not have improved SF-12.