OBJECTIVES: The objective of this analysis was to examine whether the Dermatology Life Quality Index (DLQI) provided any additional information beyond what is captured by the Psoriasis Areas and Severity Index (PASI) in psoriasis. METHODS: The DLQI is used to assess Health-related Quality of Life (HRQL) in psoriasis, with higher scores corresponding to worse HRQL. The percent improvement in PASI is the key clinical measure used to assess treatment effect in psoriasis. We used a simple mediation model, used in social science to evaluate direct and indirect effects. This model involves estimating the following equation: \( DLQI = i1 + A \times treatment; \) \( \Delta PASI = i2 + B \times treatment; \) \( \Delta DLQI = i3 + C \times \Delta PASI + D \times treatment. \) If A and B are not significant, mediation is not likely to exist. The indirect effect of treatment on \( \Delta DLQI \) (mediated by PASI) is given by B*C. If D is significant, DLQI provides additional information beyond what is captured by PASI. We used data from two large randomized, double-blind clinical trials, comparing infliximab to placebo. The change from baseline to week 10 was used to estimate the equations. RESULTS: A total of 1213 patients were enrolled in the two trials. The regression estimates were: \( \Delta DLQI = -0.51 - 9.6 \times treatment; \) \( \Delta PASI = 7.52 + 73.98 \times treatment; \) \( \Delta DLQI = 0.19 - 0.09 \times \Delta PASI - 2.73 \times treatment. \) The indirect effect was significant. However, the direct treatment effect on DLQI (not mediated by PASI) was also significant. CONCLUSIONS: The DLQI is a useful complement to PASI in assessing psoriasis treatments, as it captures additional information regarding treatment. Mediation analysis can be a useful method to assess the incremental value of HRQL measures. \(^{*}p < 0.05.\)
variable. A univariate model estimating the effect of smoking on health status was also run. RESULTS: After adjusting for demographics and other health status measures, smoking remained a highly significant factor affecting perceived health status, although the influence of smoking decreased by 40%. In the univariate model, the coefficient on smoking was $-0.43$ ($t = -15.23$, $p < 0.001$). When other explanatory variables were included in the model, the coefficient on smoking status was $-0.26$ ($t = -11.00, p < 0.001$). In the final model, all explanatory variables showed a significant effect on perceived health status, except for sex. Factors with the highest effect on health status (largest absolute t-statistics) were pain, any physical limitation, high blood pressure, and smoking, respectively. CONCLUSIONS: Although the outcome variable is measured on a five-point scale, from 1 (“excellent”) to 5 (“poor”), performing an exploratory generalized ordered logit model suggested similar associations. The effect of smoking was consistent throughout the scale of health status ratings.

SURGERY—Cost Studies

PSU1

COST-UTILITY OF ELECTIVE ENDOVASCULAR REPAIR (EVAR) COMPARED TO OPEN SURGICAL REPAIR (OSR) OF ABDOMINAL AORTIC ANEURYSMS (AAA)

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AAA is a prevalent health condition affecting up to 14% of males and 6% of females. Untreated AAAs is a serious health concern due to significant risks of rupture and death. OBJECTIVES: Estimate the cost-utility of elective EVAR compared to OSR for treating non-ruptured AAAs. METHODS: A decision analytic model was constructed to represent the long term cost-effectiveness of AAA. A systematic review of the literature was conducted for estimates of key model parameters (including technical and clinical success rates, complication rates, conversion rates and mortality). The review of the literature was supplemented with a prospective follow-up of patients from a large tertiary hospital for information on costs and health-related quality of life. Cost-utility was assessed over a one-year period. Deterministic sensitivity analyses were used to assess the impact of methodological and modeling uncertainty and probabilistic sensitivity analyses was used for parameter uncertainty. RESULTS: The 59 comparative studies identified from the literature suggest EVAR costs only $59,485 per QALY compared to OSR. However, results from our prospective study suggest EVAR costs only $59,485 per QALY in all AAA patients and may even dominate OSR in high surgical risk patients. CONCLUSIONS: Using results from literature reviews of non-randomized trials for input into an economic model can be misleading. The predominance of non-randomized trials comparing EVAR and OSR highlights the importance of adjusting for baseline imbalances in patient risk.

SURGERY—Patient Reported Outcomes

PSU2

THE SHORT TERM COST-EFFECTIVENESS OF 45 SURGICAL INTERVENTIONS IN THE UK

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OBJECTIVE: To examine the relationship between costs of surgery in relation to changes in health status. METHODS: The responses of 10,000 patients to a routine post-discharge survey were evaluated (Health Outcomes Data Repository [HODaR]). Respondents were asked to rate their health both prior to admission and on the day of surgery (7, 30, 40 days post-discharge) on a scale of 1 (worst possible health) to 100 (best possible health). Admissions were classified as either elective or emergency procedures. The primary surgical procedure was classified using 3-character OPCS4 codes. The cost for each admission was calculated using the NHS HRG grouping algorithm. RESULTS: “Before” and “after” data were available for 6456 elective admissions and 1387 emergency admissions who had all undergone a surgical procedure. Mean self-reported difference in health status was 4.8 units (SD 20.7). There was no difference in health change between elective or emergency admissions ($p > 0.05$). For elective procedures with 25 cases or more ($n = 45$ procedures) a logarithmic relationship between cost and mean health change was evident ($DQoL = 6.3024 \times \text{Lncost} - 36.62; r^2 = 0.57$), and a linear function best described the same relationship for emergency procedures ($DQoL = 0.0022 \times \text{cost} + 1.4814; r^2 = 0.50$). Procedures involving a notably improved cost-effectiveness ratio included tonsillectomy, cholecystectomy and primary excision of lumbar inter-vertebral disc. The mean cost effectiveness ratio for elective procedures was $250$ per DQoL unit and $440$ per unit for emergency surgery. CONCLUSIONS: At a macro level there was a distinct association between financial cost and short term outcome for elective procedures. The mean cost-effectiveness ratio for individual procedures showed a linear association for emergency surgery and a logarithmic association for elective surgery. Procedures which reduce pain appear to be the most cost-effective where DQoL is the outcome.