0.69 (–0.24 to 1.00), median DLQI = 10.0 (0.0–30.0). EQ-VAS and utilities significantly correlated with DLQI (Spearman's coefficient >–0.500, $p < 0.0001$ in every case). At follow-up SCORAD significantly decreased and patients reported significant higher levels of QoL with every score (Student's paired t test, $p < 0.0001$ in every index). SRM (EQ-VAS = 0.85, utility = 0.70, DLQI = 0.89) and ES (EQ-VAS = 0.90, utility = 0.76, DLQI = 0.81) were significant. **CONCLUSION:** EQ-5D and DLQI are good to measure QoL related to AD and to evaluate wellbeing change over time. A routine use of these instruments should be considered in evaluating consequences of AD and its treatment on patients' wellbeing to optimize therapeutic choices.

PSK9

QUALITY OF LIFE OF ADULT PATIENTS WITH ATOPIC DERMATITIS: THE CODA STUDY

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Skin problems such as Atopic Dermatitis (AD) cause sensitive quality of life (QoL) impairment, with major impact on psychosocial state, social relationships and everyday activities. **OBJECTIVE:** To evaluate the socioeconomic impact of AD. **METHODS:** It was a naturalistic, multicenter, longitudinal, ambispective (retro-prospective), prevalence-based Cost-Of-Illness study enrolling adult and pediatric patients with moderate or severe AD and flare-up. Data was on socio-demographic, clinical severity (with SCORAD, SCORing-Atopic-Dermatitis index, possible score = 0–100, higher score = higher severity), economic (direct and indirect costs), intangible costs in terms of Health-Related-Quality-of-Life (HRQoL), preferences towards pharmacological treatment. Following results pertain to adult patients' HRQoL, evaluated with the disease-specific DLQI (Dermatology-Life-Quality-Index, with scores 0–30, higher score = lower HRQoL) and the generic EQ-5D. **RESULTS:** A total of 98 valid adult patients (48% male) from 5 Italian dermatological centres were enrolled; 39.8% patients were 18–27 y.o., 30.6% were 28–37 y.o., 29.6% were >38 y.o. At enrollment the median SCORAD was 53.0 (18.4–90.0), the median DLQI was 10.0 (0.0–30.0), the median EQ-VAS (EQ-Visual-Analogue-Scale) was 65.0 (0.0–95.0). Concerning the EQ-5D profile, 12.2% of patients reported moderate problems with "mobility" and 27.6% with "self-care" (nobody reported severe problems), 53.0% moderate/severe problems with "usual activities", 95.1% moderate/severe levels of "pain/discomfort", 65.9% moderate/severe levels of "anxiety/depression". After 2 months from enrolment, the SCORAD decreased significantly (Wilcoxon-Signed-Ranks test, $p < 0.0001$) and patients reported higher levels of wellbeing (Wilcoxon-Signed-Ranks test for DLQI or EQ-VAS, $p < 0.0001$). Also the EQ-5D profile significally got better for "usual activities" (McNemar test: $p < 0.001$), "pain/discomfort" and "anxiety/depression" (McNemar test: $p < 0.0001$). **CONCLUSIONS:** This is the first study evaluating the QoL consequences of AD in Italy. Adults with AD have impaired levels of HRQoL, worsening during the relapse period. The adoption of HRQoL instruments can help physicians and decision-makers in the adoption of more effective and efficient health care technologies.

PSK10

OVERCOMING DIFFERENTIAL ITEM FUNCTIONING ASSOCIATED WITH MEASURING PATIENT REPORTED OUTCOMES IN MULTINATIONAL CLINICAL TRIALS

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OBJECTIVES: Little attention has been paid to determining whether different language versions of the same patient-reported outcome (PRO) measure are equivalent and if their use introduces bias into multinational studies in the form of differential item functioning (DIF). The study was designed to see whether it is possible to overcome such DIF in the development of PRO measures. **METHODS:** Data collected with a draft PRO—the 12-item Quality of Life Index for Children with Atopic Dermatitis (QoLICAD)—from France, Germany, Italy, The Netherlands and USA were analysed. Rasch analyses were applied to the data from each country to determine item fit and DIF by culture. Where some but not all items display DIF, it is possible to treat them as a different item in each country. This procedure is referred to as "splitting" items. The analysis was then re-run on the new item sets. **RESULTS:** Data were available on 691 (52.4%M; mean age 4.4 years) children in the 5 countries. Rasch analyses applied to the data indicated that, following the removal of misfitting items, there was considerable DIF by country. A European and separate US QoLICAD were derived. Four items were deleted and four were split to create a 20-item European scale that fitted the Rasch model (Chi2 $p < 0.002$ after bonferroni correction). Five items were deleted before the US scale fitted the Rasch model (Chi2 $p < 0.004$ after bonferonni correction). The European and US data were linked by six common items allowing pooling of data from an international study. **CONCLUSIONS:** Language adaptations should be conceptually equivalent to the original. However, DIF by culture may remain. If data are to be pooled such DIF needs to be assessed and accounted for. The method illustrated is a suitable way of achieving this but requires further testing in a clinical trial setting.

PSK11

CARE GIVERS' WILLINGNESS TO PAY FOR DIFFERENT CHARACTERISTICS OF THE ATOPIC DERMATITIS TREATMENT

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OBJECTIVE: The preferences of patients and their care-givers should be considered in the development of treatment strategies. The aim is to establish care-givers' preferences and their willingness-to-pay (WTP) on different Atopic Dermatitis (AD) treatment options. **METHODS:** The CODA study was a naturalistic, multicentre, longitudinal ambispective (retro-prospective), prevalence based Cost-of-Illness study. Data on patients with moderate or severe AD enrolled during flare-up were collected. A discrete-choice-experiment (DCE) was applied to care-givers of the enrolled children. enrolled patients. The enrolled subjects had to choose between two different scenarios in 16 pair-wise comparisons. The following attributes were considered to be important after interviewing 20 care-givers and 6 physicians: distribution mode (local-pharmacy vs. hospital-pharmacy), the delay of The rapeutic-response (4 hours vs. 24 hours vs. 48 hours), duration of therapeutic-response (1 week vs. 4 weeks vs. 8 weeks), long-term side effects (possible vs. no), local side effects (possible vs. no). In order to obtain the WTP we added cost of treatment out-of-pocket (€0 vs. €50 vs. €100/month). **RESULTS:** The caregivers (98% parents) of 79 valid children filled in the

DCE questionnaire. The variable "cost" was a significant determinant in treatment's choice. A monetary value could be assigned to each of the other 5 attributes. A significant monetary discrimination was reached for all attributes ($P < 0.001$), except for distribution mode. The conditional-probit-model demonstrated that care-givers are willing-to-pay: €81 for No local Side Effects, 80€ for No long term side effects, €64 for 8 weeks of therapeutic response and €27 for one day of the rapeutic response delay. **CONCLUSION:** To our knowledge, our study is the first to elicit preferences and WTP from the care givers of children with atopic dermatitis. The importance of this study is the achievement of care givers preferences in a simply and well accepted method to allow planning optimal health care.

POSTER SESSION II

METHODS & CONCEPTS

PMC1

SIMULATION MODELING OF CARDIOVASCULAR DISEASE: IS APPLYING AVERAGE LIFE EXPECTANCY TO ALL SURVIVORS DETAILED ENOUGH?

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OBJECTIVES: Trials are too short to fully quantify survival, yet detailed life expectancy estimates are required to accurately assess the cost-effectiveness of interventions for cardiovascular disease. Whether the overall life expectancy of a cohort provides an adequate proxy for patients suffering events during follow up is examined in this study. **METHODS:** Health records of Saskatchewan residents with cardiovascular disease between 1990 and 1995 were obtained. Data were available from January 1980 through December 2002 or date of death. Life expectancy was estimated for the entire cohort of patients and separately for patients with subsequent non-fatal myocardial infarction (MI) or stroke, and with no further events. Piece-wise parametric regressions were used to derive mortality hazard functions; time-dependent Cox proportional hazards were used to adjust for covariates. The resulting hazard functions were used to derive the survival curves. **RESULTS:** Of 53,983 patients (56% male; mean age 70.4 years) 3898 suffered subsequent non-fatal MI and 3714 non-fatal stroke. Accounting for the occurrence of these events lead to considerably shorter life expectancy compared to projected survival derived from the full cohort. For instance, the life expectancy of a 60 year old male who survived an MI is estimated to be 16.6 years when derived from the full cohort versus 13.5 years when this event is considered. The impact of stroke is even greater, as the expected survival after this event is 9.9 years. Differences between full-cohort and event-based estimates were larger for women. For a 60 year old female, the full-cohort estimate is 19.7 years and 15.1 and 11.3 years after MI and stroke, respectively. **CONCLUSIONS:** Events that occur during follow-up strongly impact the life expectancy of those who survive beyond the study window. Ignoring such differences by oversimplifying model inputs can lead to inaccurate results and dilute treatment effects.

PMC2

EFFICIENT DATA MINING AND PROBABILISTIC INFERENCE WITH P-COURSE: A BAYESIAN METHOD WITH MULTILEVEL PRIORS FOR MEDICAL APPLICATIONS

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OBJECTIVES: As observations, parameters, and models are uncertain, there exist several ways to explain data with the parameters and models. Of all the plausible explanations, the simplest can be considered best, yielding the best predictions (the "Occam's razor" principle). Relevant parameters are needed in prognostics. This paper presents an efficient and innovative supervised method for prediction/estimation: a new greedy Naive Bayesian Network (NB) classifier P-Course. **METHODS:** Predictions are sequential by nature: choice regarding the next parameter, test or drug depends on the previous inference and earlier experience. This sequence provides valuable information for relevance, which P-Course's hill-descending screening utilizes: the greedy algorithm starts with an empty predictor set, evaluates all possible changes at each iteration, applies the parameter leading to the best improvement in log score (indicator for prediction distribution) and stops when no improvement is gained in the score. **RESULTS:** P-Course introduces a rare possibility to utilize multiple priors to improve model's accuracy and area under ROC curve (AUC) in exploratory/confirmatory analysis. P-Course offers several functionalities through a graphical user interface. First, the data is uploaded in ASCII format through "Administration". Then, in "Properties", the dependent variable and independent variables (automatic/manual/ignore) are chosen. In "Priors", likelihood or weights with multilevel priors (direct/reversed) are chosen. The overall quality of the models, defaults, and case-by-case predictions can be tested with e.g. leave-one-out cross-validation, with a new data set (substitution) or with a stratum excluded from the teaching set (portioning) through "Prediction". Likelihood, posterior and inverse probability predictions are available in the "Java Playground". Severe over-learning is rarely observed. The approach is supported by theory and predictions. **CONCLUSIONS:** P-Course can utilize scarce, censored and complex data for e.g. segmentation, stratification, prediction, merging, data reduction, variable screening, interaction and adverse event identification, value of information (VOI), sensitivity analysis, inversion, diagnostics, and decision support.