meaningful. This equated to the change found following six-months of treatment.

**PSK7**

**USING DUAN’S SMEARING ESTIMATOR TO MEASURE COST OF CHRONIC HAND DERMATITIS (CHHD) IN A MASSACHUSETTS HEALTH MAINTENANCE ORGANIZATION (HMO)**

Ghosh A¹, Mouneyr E¹, Sung J¹, Duh MS¹, Den E¹, Chang J¹, Fowler JF²

¹Analysis Group, Inc. Boston, MA, USA; ²Novartis Pharmaceuticals Corporation, East Hanover, NJ, USA; ³Duke Clinical Research Institute, Durham, NC, USA; ⁴University of Louisville, Louisville, KY, USA

**OBJECTIVES:** Monetary cost, positive values truncated at zero, violates normality assumption when used as the dependent variable in ordinary least squares (OLS) regressions. Log transformation of cost removes the skewness, but the resulting coefficients are not directly interpretable as raw dollars. Simply taking exponent of fitted regression coefficients causes retransformation bias. Duan’s nonparametric smearing estimator may be valid for skewed residual of cost. Duan’s nonparametric smearing estimator factors into the mean of the anti-log of the residuals, thus correcting retransformation bias. The goal of this analysis is to apply Duan’s smearing technique to transform logged costs to evaluate the incremental cost of ChHD using claims data from an HMO. **METHODS:** A 13-item self-assessment questionnaire identifying ChHD and its severity was developed, validated, and mailed to 1,380 randomly selected members of a Massachusetts HMO. Average monthly costs for questionnaire respondents were calculated by the sum of approved and co-payment amounts from claims filed between April 1, 2001–December 31, 2003 divided by months of observation. OLS regression of logarithm of cost was used, with covariates consisting of a ChHD dummy, and demographic and co-morbid factors. Using Duan’s estimator, average monthly incremental cost of ChHD was calculated by multiplying percentage cost increase for ChHD from the OLS regression by predicted average monthly cost for Non-ChHD patients (which is the average cost after removing the effect of the ChHD dummy). **RESULTS:** 140 of 507 questionnaire respondents were identified as ChHD. Univariate comparison showed no statistical difference in monthly cost between the ChHD and Non-ChHD groups (Non-ChHD, $326.98 ± 29.52, ChHD $270.87 ± 23.59, p = 0.1383). A skewness and kurtosis test rejected normality. However, multivariate analysis showed that ChHD patients had a statistically significant monthly cost increase of 25.2% (±2.5%) compared to Non-ChHD (p < 0.001), amounting to an average monthly increase of 25.2% (±3.3%) years and 55% of patients were males. Mean duration and treatment of illness were 3.0 ± 2.2 years and 20.7 ± 21.4 months, respectively. Parents’ assessment of disease severity indicated that 82% of patients had mild AD and 13% of patients had moderate AD. Patients reporting at least one flare experienced 2.8 ± 2.3 flares per month; mean duration of flares was 5.2 ± 7.0 days. Disease flares negatively impacted patients’ quality-of-life. PIQoL-AD scores worsened among those parents whose child had disease flares. Mean PIQoL-AD scores were statistically significantly higher (5.9 ± 5.4 vs. 3.0 ± 3.6, p < 0.0001) for those parents whose child had disease flares compared to those who did not have disease flares. **CONCLUSIONS:** Study findings will improve our understanding of the impact of AD on children and their parents/caregivers and may enhance treatment effects, clinical outcomes, and patient and parent/caregiver education. Further investigation is needed to understand the impact of atopic dermatitis on parents’ quality-of-life.

**PSK9**

**PREVALENCE OF CHRONIC HAND DERMATITIS AND ITS IMPACT ON PATIENT–REPORTED OUTCOMES IN A MANAGED CARE POPULATION**

Fowler JF¹, Duh MS², Chang J³, Ghosh A², Sung J², Emani S², Den E², Thorn D¹, Person J²

¹University of Louisville, Louisville, KY, USA; ²Analysis Group, Inc, Boston, MA, USA; ³Duke Clinical Research Institute, Durham, NC, USA; ⁴Novartis Pharmaceuticals Corporation, East Hanover, NJ, USA; ⁵Fallon Clinic, Worcester, MA, USA; ⁶Fallon Clinic, Auburn, MA, USA

**OBJECTIVES:** The prevalence of chronic hand dermatitis (ChHD) and its impact on patient-reported outcomes, including quality of life (QoL), work and activity impairment, were evaluated in a managed care organization (MCO). To date, few studies have investigated ChHD using a general population-based approach. **METHODS:** A validated cross-sectional patient-reported survey was mailed to 1380 members of a Massachusetts MCO. The survey consisted of: a 13-item clinical questionnaire identifying ChHD based on signs and symptoms of dermatitis related to hands, treatment response, and diagnoses of exclusion; the Skindex-29, a 29-question dermatology-specific QoL instrument; and the Work Productivity and Activity Impairment (WPAI) instrument validated for ChHD. Those receiving the survey were randomly sampled from the general MCO population and a subset population with ≥ two medical claims with a dermatitis or eczema diagnosis (ICD-9 692 or 691.8). ChHD patients were compared to patients with other skin conditions and to Non-ChHD patients to assess their relative QoL and WPAI measures, respectively. **RESULTS:** Based on the survey respondents (36.7% response rate), the prevalence of ChHD was 17.5% in the MCO general population, a rate much higher than previously found (2–12%). QoL and WPAI measures for the ChHD patients were significantly worse than those for their comparison groups (Skindex score: ChHD = 30.33 ± 17.51, Other Skin Conditions = 20.05 ± 16.68; Work Impairment: ChHD = 29.33%, Non-ChHD = 6.85%; Activity Impairment: ChHD = 33.78%, Non-ChHD = 17.32%; all p < 0.0001).