SKIN

COST-EFFECTIVENESS ANALYSIS OF AMEVIVET\(^\text{TM}\) (ALEFACEPT) IN THE TREATMENT OF PATIENTS WITH MODERATE-TO-SEVERE PSORIASIS

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OBJECTIVES: Alefacept is a new biological that is effective for moderate-to-severe plaque psoriasis. This study evaluated its cost-effectiveness compared to traditional systemic treatments.

METHODS: A two-year Markov model was developed. Response was measured using Psoriasis Area and Severity Index Score (PASI) 75 and length of remission. Treatment comparators were methotrexate, cyclosporine, and phototherapy (with/without acitretin). Data and resource use were derived from the literature, expert clinical opinion and a cost of illness (COI) study. Costs (Canadian dollars) were obtained from standard published sources. Analyses were conducted from the Ontario Ministry of Health (MoH) and societal (SOC) perspectives.

RESULTS: In the MoH base case, expected costs were $7,790, $9042, $10,635, $32,859 for methotrexate, phototherapy, cyclosporine and alefacept, respectively. Response-days associated with each treatment were 175, 78, 175 and 247 days respectively. Phototherapy and cyclosporine were both dominated. The incremental cost-effectiveness ratio (ICER) was $349/response-day ($127,473/response-year) for alefacept over methotrexate. In the SOC base case analysis, the expected costs were $11,871, $13,416, $15,010 and $36,510 respectively. Phototherapy and cyclosporine were both dominated. The ICER was $343/response-day ($125,281/response-year) for alefacept over methotrexate. These analyses used PASI 75 scores to measure treatment.

CONCLUSION: Alefacept offers incremental benefits compared to methotrexate, and displays cost-effectiveness in selected scenarios while cyclosporine and phototherapy were compared to methotrexate, and displays cost-effectiveness in years. Over three years were similar to those for PASI 75 after five years; results from the SOC perspective were similar. In a sensitivity analysis, savings also increased over time. Results from PASI 50 over three years were similar to those for PASI 75 after five years.

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NUMBERS-NEEDED-TO-TREAT AND ASSOCIATED COSTS OF CARE FOR TREATMENT OF MODERATE-TO-SEVERE PSORIASIS

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OBJECTIVES: To examine Number-Needed-to-Treat (NNT) and compare associated costs of care among treatments for moderate-to-severe psoriasis. METHODS: We conducted an Expert Panel systematic literature review of randomized, placebo-controlled trials for moderate-to-severe psoriasis. Study inclusion criteria were designed to minimize bias. Treatments included traditional oral systemics (acitretin and cyclosporine) and newer biologics (alefacept, efalizumab, etanercept, infliximab). For each treatment, we applied systematic literature review findings to calculate NNT (average number of patients required to achieve one additional treatment success compared to placebo). Treatment success was defined as 75% improvement on the Psoriasis Severity Area Index (PASI) or “clear/almost clear” status per physician global assessment (PGA). We used the US Average Wholesale Drug Prices and 2004 Medicare Reimbursement Rates to estimate annualized total treatment costs (USD). Costs reflected the US managed health care payer perspective and comprised: medications + treatment administration (e.g., IV infusion) + monitoring (e.g., laboratory procedures) + risk-adjusted adverse events costs. RESULTS: NNT (95% CI) were: acitretin 50 mg/day NNT = 2 (1–6); alefacept 15 mg/week NNT = 5 (3–9); cyclosporine 3 mg/kg/day NNT = 3 (2–6); efalizumab 1 mg/kg/week NNT = 5 (4–9); etanercept 50 mg twice weekly NNT = 2 (2–3); infliximab 5 mg/kg weeks zero, two, six and bimonthly thereafter NNT = 1 (1–1). Estimated annualized total treatment costs were: cyclosporine $6951; acitretin $13,060; efalizumab $17,999; etanercept $21,158; infliximab $26,436; and alefacept $27,098. Using NNT results, we estimated the following annualized costs to achieve one treatment success: cyclosporine $20,853; acitretin $26,120; infliximab $26,436; etanercept $42,316; efalizumab $89,995; and alefacept $135,490. CONCLUSIONS: In an environment absent of head-to-head comparative trials, where burgeoning demand for newer and more costly treatments contends with limited health care resources, payors and providers seek alternative methods to compare safety, efficacy, and costs of treatment for moderate-to-severe psoriasis. Our NNT analysis suggests that although newer biologic treatments offer helpful treatment alternatives, traditional oral systemics may provide more cost-effective treatment options.

SKIN

FACTORS ASSOCIATED WITH MEDICATION USE AFFECTING HEALTH CARE COSTS IN PATIENTS WITH PSORIASIS IN THE UNITED STATES

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OBJECTIVE: The impact of psoriasis medication therapy on costs and patient outcomes in large nationally representative samples needs further examination. The study examined the association between factors related to medication use and costs linked with the treatment of psoriasis in the United States.

METHODS: Longitudinal cohort study using the United States Medical Expenditure Panel Survey (MEPS) Database (1996–2001). Information on health care service utilization, costs, demographics and clinical patient variables were obtained from the MEPS dataset. Self-reported health status information was obtained from the EuroQol (EQ-5D) used in MEPS. Multivariate weighted analysis was performed on data for approximately 333,000 patients (weighted sample size). RESULTS: Approximately 44% of the psoriasis-specific health care cost in patients was accounted by medications alone, with an average of 3.4 psoriasis prescription refills annually. Topical corticosteroids were used by as many as 57.1% of patients, 30.5% used other medications, while, 12.4% did not receive any pharmaceutical treatment. About 42% of the variance was explained by the multivariate models examining predictors of health care costs. Among medication-related factors, increased psoriasis prescription refill rates were associated with an increase in psoriasis-specific health care costs (p = 0.009). Increase in fre-
frequency of office-based visits was the primary driver of increased psoriasis-specific health care costs (p = 0.02). There were no significant differences in health care costs among patients using different types of psoriasis medications. CONCLUSIONS: Cost towards psoriasis medications account for most of the psoriasis-specific health care costs. Increase in frequency of office-based visits seems to be the primary driver of increased psoriasis-specific health care costs.

PSK4

THE LIFETIME COST OF TREATING SEVERE PSORIASIS WITH HOME UVB THERAPY

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OBJECTIVE: There have been tremendous advances in treatment for patients with extensive psoriasis. Many of the newer treatments have shown great promise, but at a significant cost to the health care system. Office phototherapy treatments continue to be an excellent first choice because of high safety, good efficacy and relatively low cost. Unfortunately, office phototherapy may not be feasible for many patients. Home UVB offers another option for these patients. The purpose of this study is to assess the long-term financial cost of home UVB treatment.

METHODS: We constructed a societal cost model for owning and operating a home UVB unit over a period of 30 years. This model included both direct and indirect costs associated with home treatment and periodic follow-up. These data were compared to the cost of other monotherapies for extensive psoriasis.

RESULTS: The discounted present value of 30 years of treatment with home UVB was approximately $10,000. The initial one-time cost of the home UVB device, approximately $2000, is only a small component of the lifetime cost. Over the same treatment period, methotrexate had an estimated cost of $23,530. The cost of one year of biologic treatment exceeded the lifetime cost of home UVB.

CONCLUSIONS: Home UVB is not for every patient with psoriasis. Highly inflammatory lesions or significant co-existent arthritis are just two of many reasons that systemic treatments may be required. Nevertheless, home UVB offers a very cost-efficient approach to treatment. Insurers should consider this option more available to patients with extensive psoriasis.

PSK5

COST-UTILITY ANALYSIS OF AMEVIVE™ (ALEFACEPT) IN THE TREATMENT OF PATIENTS WITH MODERATE-TO-SEVERE PSORIASIS

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OBJECTIVES: Quality of life concerns (social discomfort, embarrassment, etc.) are an important aspect for patients with moderate-to-severe plaque psoriasis. A lefacept is a new biological found effective for treatment. This cost-utility analysis was conducted to compare standard therapies to alefacept.

METHODS: A two-year Markov model was developed. Response was assessed using the Psoriasis Area and Severity Index Score (PASI) 75. Patient preferences were expressed in utilities. Treatments with high utilities represented the greatest health improvement. Treatment comparators were methotrexate, cyclosporine, and phototherapy (with/without acitretin). Data, resource use, and health-state utilities were derived from literature, expert clinical opinion and a cost of illness (COI) study.

RESULTS: In the MoH base case, expected costs were $7,790, $9,042, $10,635, $32,859 for methotrexate, phototherapy, cyclosporine and alefacept, respectively. Response-days associated with each treatment were 175, 175 and 247 days respectively. The cost of each additional QALY (Quality-adjusted life-year), compared to methotrexate, was $97,887. For the SOC base case, each additional QALY was $96,426. Phototherapy and cyclosporine were dominated. These results used the PASI 75. However, the PASI 50 may be more clinically relevant for dermatologists and patients. Using the PASI 50, alefacept had the highest cost and highest utility of $92,043 (MoH) and $88,391 (SOC) per QALY. Psoriasis is a chronic disease, and it is important to assess cost-utilities over time. After five years, the QALY for the MoH perspective was $31,412. SOC results were similar. Using the PASI 50 response rates, the cost per QALY after three years was similar to that of the PASI 75 after five years.

CONCLUSION: Alefacept compares favourably to methotrexate, the current standard of treatment, and is cost-effective in several scenarios while cyclosporine and phototherapy were dominated.

PSK6

INTERPRETING SCORES ON THE QUALITY OF LIFE INDEX FOR ATOPIC DERMATITIS (QoLIAAD)

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OBJECTIVES: To aid in the interpretation of scores on the QoLIAAD and provide information on what represents meaningful change in QoLIAAD scores. METHODS: The QoLIAAD is a 25-item needs-based instrument assessing the quality of life (QoL) of individuals with atopic dermatitis (AD). It has simple “Yes”/“No” response options and scores range from zero to 25. Data collected from patients in a six-month, multinational, open-label study were analysed. Effect Size (ES), Standardised Response Mean (SRM), the Responsiveness Statistic (RS) and Standard Error of Measurement (SEM) were calculated. An anchor-based Minimal Important Difference (MID); which provides an estimate of clinical meaningfulness was derived by measuring QoL change accompanying changes in disease severity on a six-point Investigator’s Global Assessment (IGA). The IGA ranged from zero (clear) to five (very severe disease). QoLIAAD scores were also anchored to questions asking patients if they would continue to use or recommend the study treatment.

RESULTS: In total, 264 AD patients completed the QoLIAAD (112/42% male; mean age 37 ± 14.3; baseline mean QoLIAAD = 7.1 ± 5.4; two-months = 5.8 ± 5.6; six-months = 4.9 ± 5.3). Changes from baseline were significant (p < 0.001, Wilcoxon test). According to ES, changes of 1.1, 2.7, and 4.3 represent small, moderate and large changes in QoLIAAD scores, respectively. One SEM = 1.71; 1.96 SEM = 3.35. Mean change scores of patients who would definitely continue to use and definitely recommend product was 1.8 and 2.2, respectively. A two-point improvement in IGA scores equated to a 2.1 (baseline two-months) and 3.1 (baseline six-months) change in QoLIAAD scores. CONCLUSION: Distribution- and anchor-based methods of interpreting instrument scores suggest that a change in QoLIAAD scores of between two and three can be considered.