PGI21

COST-EFFECTIVENESS ANALYSIS OF USTEKINUMAB VERSUS ADALIMUMAB, INFLIXIMAB AND VEDOLIZUMAB FOR THE TREATMENT OF PATIENTS WITH MODERATELY TO SEVERE ACTIVE CROHN'S DISEASE FOR TURKEY

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OBJECTIVES: To evaluate the cost-effectiveness of Ustekinumab compared to available biologic treatments (adalimumab [ADA], infliximab [INF] and vedolizumab [VED]) in the treatment of adult patients with moderately to severely active Crohn's disease who have failed or are intolerant to conventional treatment or a tumour-necrosis-factor (TNFα) antagonist. **METHODS:** A life time horizon Markov model representing the transitions of active Crohn's disease patients among four health states (remission, mild, moderate/severe and surgery) depending on their response status, was adapted to Turkey. Clinical inputs were derived from published results of the clinical trials of all treatment options. The analysis was undertaken from payer's perspective. Only direct local costs such as medication, administration, surgical procedures, surgical complications, monitoring and side effects were taken into account. Incremental Cost-effectiveness Ratio (ICER) per quality-adjusted-life-years (QALY) gained were calculated. American dollars were used as the currency unit based on the Purchasing Power Parity (PPP) (1USD*=1.38TL-OECD 2017). Willingness-to-pay (WTP) threshold was set as three times the local gross domestic product per capita adjusted by PPP (76,965 PPP-USD as of 2018). **RESULTS:** In conventional treatment failure/intolerance population (with 3 years of treatment); QALY gained with Ustekinumab was 0.118 and 0.312 years longer than ADA and INF (23.81, 23.69 and 23.49 years, respectively). ICERs against ADA and INF were calculated as 56,509 PPP-USD/QALY and 44,349 PPP-USD /QALY, respectively. In TNFα antagonist failure/intolerance population; QALY gained with Ustekinumab was 0.158 years longer than VED (24.39 years vs 24.23 years), while providing a cost-saving of 872 PPP-USD. **CONCLUSIONS:** Ustekinumab has been determined to be cost-effective against ADA and INF; while with more QALY and less cost, it has been determined to be the dominant treatment option compared with VED.

PGI22

COST-EFFECTIVENESS OF VEDOLIZUMAB VERSUS USTEKINUMAB IN UNITED KINGDOM CROHN'S DISEASE PATIENTS WHO PREVIOUSLY FAILED TNF INHIBITOR THERAPY

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OBJECTIVES: To estimate the cost-effectiveness of vedolizumab (VDZ) compared with ustekinumab (UST) in the treatment of patients with moderately to severely active Crohn's disease (CD) who have previously failed tumor necrosis factor alpha inhibitors (anti-TNFs) in the United Kingdom (UK). **METHODS:** A two-part decision-analytic model (1-year decision tree and post-1-year Markov model) was developed in Microsoft Excel to compare VDZ (with 8-weekly maintenance dose) with UST (with 12-weekly maintenance dose) for treatment of CD patients in the UK who previously failed anti-TNF treatment. The model time horizon was 5, 10, and 30 years. Population characteristics and efficacy data were derived from published clinical trial data for each treatment. Other inputs (e.g., costs, utilities, surgery risk, mortality, etc.) came from published literature. Costs (in 2017 British pounds), quality-adjusted life-years (QALY), surgeries, and years in remission were estimated and discounted by 3.5% annually. Incremental cost per QALY gained was estimated to determine cost-effectiveness. One-way sensitivity analyses and multivariate probabilistic sensitivity analyses (PSA) were conducted to assess model robustness to parameter uncertainty. **RESULTS:** VDZ patients accrued more QALY than UST patients: 2.348, 3.997, and 8.111 for VDZ vs 2.341, 3.980, and 8.091 QALYs for UST over 5, 10, and 30 years, respectively. Findings were similar for surgeries (VDZ patients incurred fewer) and years in remission (VDZ patients accrued more). VDZ patients also incurred lower costs than UST patients (savings ranged from £643 to £1,253), making VDZ dominant compared with UST. Results were most sensitive to treatment response in induction. In the PSA, VDZ was dominant compared with UST in 50.18% and cost-effective in 62.26% of simulations. **CONCLUSIONS:** Our model predicted that treatment with VDZ improves QALY, increases time in remission, reduces surgeries, and is a cost-saving strategy compared with UST for anti-TNF failure patients with moderately to severely active CD in the UK.

PGI23

COST-EFFECTIVENESS ANALYSIS OF PARENTERAL METHOTREXATE FOR THE TREATMENT OF CROHN'S DISEASE IN THE CZECH REPUBLIC

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OBJECTIVES: Clinical evidence suggests that parenteral methotrexate (MTX) provides benefit for induction of remission and complete discontinuation of high-dose oral corticosteroid treatment (hdCS; >20mg/day) in patients with Crohn's disease (CD). Our aim was to assess cost-effectiveness of MTX in the treatment of mild-to-moderate CD in comparison to hdCS/placebo with its gradual withdrawal in the Czech Republic. **METHODS:** We developed a three-year Markov model with one-week cycle length in TreeAge. The model comprises four health states – initial state of mild-to-moderate CD (16-week treatment with MTX or hdCS), steroid-free remission, lack/loss of response and death. It projects quality-adjusted life-years (QALYs) and costs from healthcare payers' perspective. Costs were based on list prices, reimbursement tariffs and previous pharmacoeconomic analyses as of 02/2018. Costs and outcomes were discounted by 3%. Transition probabilities between health states were provided by clinical trials and extrapolated using survival analysis. Mortality rate was taken from Czech mortality tables and adjusted to CD. Utilities were derived from the published mapping algorithm. One-way sensitivity analysis (OWSA) accompanied by scenario analysis (SA) was performed. Probability sensitivity analysis (PSA; 10,000 iterations) was run using an implicit willingness-to-pay threshold (WTP) of €47,000/QALY. **RESULTS:** Over a three-year time horizon, MTX yields additional 0.06 QALYs (1.92 vs. 1.86) at the additional total cost of €761 (€2263 vs. €1503) compared with hdCS, with the incremental cost-effectiveness ratio of €13,077/QALY. PSA showed that probability of MTX to be cost-effective was 99.89% at the WTP. OWSA and SA confirmed the robustness of the base-case result with all one-way changes and scenarios deeply below WTP. **CONCLUSIONS:** Parenteral MTX is a cost-effective therapy for patients with mild-to-moderate CD receiving hdCS. Therefore, it was swiftly and positively assessed by the local authority. To our knowledge, this is the first published cost-effectiveness analysis of parenteral MTX for this indication.

PGI24

COST-UTILITY ANALYSIS OF VITAMINE E AND PIOGLITAZONE IN ADDITION TO 2 YEARS OF LIFE-STYLE MODIFICATION THERAPY FOR NON-ALCOHOLIC STEATOHEPATITIS PATIENTS IN JAPAN

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OBJECTIVES: Non-alcoholic steatohepatitis (NASH) is the commonest liver disease in developed countries. As previous cost-effectiveness studies focused on medical intervention to disease states characterized with advanced fibrosis (F3 and F4), there is no comparative evaluation of existing therapeutic options to NASH cohort including F0, F1, and F2; patients at these fibrosis stages are also associated with long-term morbidity and mortality, accounting for more than 90% of NASH population. This study assessed cost-effectiveness of Vitamin E and Pioglitazone in addition to life-style modification therapy to the entire NASH population in Japan. **METHODS:** A Markov model was created in a payer perspective, to compare life time costs and utilities of three treatment strategies administered for 2 years, i) life-style modification (LSM) only, ii) LSM with Vitamin E, and iii) LSM with Pioglitazone, in a cohort of 100,000 biopsy proven NASH patients at the age of 40 regardless of sex and followed for 40 years to the age of 80. Ten disease states were defined as "Well with F0-F1", "Well with F2-F3", "Compensated Cirrhosis (F4)", "Decompensated Cirrhosis", "Hepatoma", "Liver Transplant", "Resection", "Locoregional treatment", "Sorafenib", "Palliative care". State transition probabilities as treatment effects on fibrosis stage transition were obtained from the only placebo-controlled randomized study comparing these three strategies, whereas annual transition probabilities from the 3rd year, and all the utilities and costs data were adopted from previous reports. **RESULTS:** As compared with i) LSM, the strategy recommended as evidence level A in NASH treatment Guideline, ii) LSM with Vitamin E was dominant, showing reduction in lifetime medical costs, 79,356 yen/patient. iii) LSM with Pioglitazone was also dominant over i) LSM only, associated with reduction of 84,146 yen/patient. **CONCLUSIONS:** Both Vitamin E and Pioglitazone are considered as cost-effective medication for NASH patients regardless of their fibrosis stages, when used in addition to life-style modification.

PGI26

COST SAVING ANALYSIS OF A COMMUNITY STOMA CARE SERVICE

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OBJECTIVES: Patients with stomas (ostomates) are at high risk of peri-stomal skin complications (PSC), leading to patient distress and financial burden. This study investigated if a community specialist nurse-led review and intervention programme conferred cost savings. **METHODS:** Ostomates from 179 primary care practices were invited to attend a review from stoma care specialist nurses, where the; prevalence of complications and whether the patient would have sought help elsewhere, were recorded. Interventions carried out included; advice, stoma product changes and ceasing inappropriate products. A cost analysis model was used to; quantify the annual cost of treating PSC using £204.77/7 weeks × 7.4 episodes, and to quantify decreased resource usage. To calculate cost savings from avoided visits, unit costs per appointment were; £127 stoma care nurse (SCN), £37 General Practitioner (GP) and £202 Emergency Department (ED). Savings from changed product usage were based on individual product costs. **RESULTS:** Initial visits were conducted with 1968 ostomates, median age of 72 years (62-80 IQR). Demographics were; males 54% (n=1,065), cancer 40% (n=792) and stoma duration greater than 5 years 47% (n=920). PSC was reported by 24% (n=469). The annual mean cost per patient of treating PSC was £1515.27 and for the sample was £715,690.50. The mean annual cost savings from avoided appointments were; £53,523 (SCN), £6,618 (GP) and £346 (ED). A 10% decrease in product costs was seen, corresponding to £450,106 as an annual cost saving in the study group. **CONCLUSIONS:** A nurse led review programme identified previously unrecognised stoma issues reported by ostomates, including among those with long term stomas. Nurse led intervention conferred cost benefits not only from decreasing product costs but by diverting ostomates from alternative NHS resources.