

PMS26

COST OF DUPUYTREN CONTRACTURE IN THE CZECH REPUBLIC

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OBJECTIVES: To determine the cost of Dupuytren's contracture in the Czech Republic. **METHODS:** Survey among general surgery specialists and orthopedic surgeons (panel of total 9 surgeons) conducted. The assessment itself was done using a classical Delphi panel method, combined with data from medical charts and/or hospital information systems. Besides the surgeons, also rehabilitation specialists (to cover costs for rehabilitation) and internal medicine specialists (to cover complications) were included into the panel. **RESULTS:** If indirect costs (productivity loss) are included, they represent the major part of all costs (76 %). In case of direct cost inclusion, rehabilitation stands for more than 50% of costs, followed by surgery costs (almost 30 %). Mean direct costs (1 operation field) are estimated at about 12,000 CZK with a variation of 9 200 to 14,400 CZK. If indirect costs (productivity loss) are included, total costs increase dramatically, arriving at mean costs of almost 50 thousand CZK (21,800 to 90,200 CZK). **CONCLUSIONS:** Cost of Dupuytren's contracture range from 21,800 to 90 200 CZK if indirect cost included. Indirect cost represent 76% of all costs.

PMS27

RETROSPECTIVE CHART REVIEW TO ASSESS UTILIZATION OF RESOURCES AND COSTS RELATED TO POSTMENOPAUSAL OSTEOPOROSIS TREATMENT OF PATIENTS WITHOUT FRACTURES IN SLOVENIA, SERBIA, SLOVAKIA AND BULGARIA

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OBJECTIVES: To evaluate utilization of resources and direct medical costs of postmenopausal osteoporosis treatment in patients without fractures. **METHODS:** A medical chart review was performed to examine the medical resources used to treat osteoporosis during the year preceding the start of the study. Data were collected between July 2010 and April 2011 by local investigators from 5 centers in Slovenia (99 patients), 5 in Serbia (105), 10 in Slovakia (100) and 3 in Bulgaria (106). Data of patients above 50 years of age, diagnosed with osteoporosis without fractures and treated for osteoporosis was included in the study. Based on these data, costs of osteoporosis treatment from the public payer and patient's perspective in all countries except Bulgaria were estimated. Costs of ambulatory and outpatient visits, examinations and drugs were calculated. **RESULTS:** Patients with osteoporosis were monitored more frequently in Slovenia and Slovakia (on average 2.00 and 1.87 ambulatory visits per year, respectively). In Serbia and Bulgaria, ambulatory visits were less frequent (0.79 and 0.67 visits per year, respectively). Percentages of patients treated with bisphosphonates were 99%, 98%, 78% and 61% in Slovakia, Bulgaria, Slovenia and Serbia, respectively, while 83%, 85%, 81% and 57% was treated with calcium and vitamin D supplements, respectively. Average 1-year cost of osteoporosis treatment was highest in Slovakia and Slovenia, accounting for 491 € (CI95%: 444; 634) and 384 € (CI95%: 345; 435), respectively, while in Serbia these costs were 190 € (CI95%: 164; 231). **CONCLUSIONS:** The highest standard of treatment and monitoring osteoporosis was observed in Slovenia. On the other side treatment of osteoporotic patients generated the highest costs in Slovakia, however some of these costs could be related to comorbidities.

PMS28

RETROSPECTIVE CHART REVIEW TO ASSESS UTILIZATION OF RESOURCES AND COSTS RELATED TO POSTMENOPAUSAL OSTEOPOROTIC FRACTURES IN SLOVENIA, SERBIA AND BULGARIA

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OBJECTIVES: To evaluate utilization of resources and direct medical costs of postmenopausal osteoporotic fractures (proximal femur and vertebral) in the first and subsequent years after the event. **METHODS:** A medical chart review was performed to examine the medical resources used to treat the two most costly osteoporotic fractures in the first and second or subsequent year after the event. Data were collected between December 2009 and April 2011 by local investigators from 5 centers in Slovenia (159 patients), 5 in Serbia (199) and 3 in Bulgaria (186). Documentation of patients above 50 years of age with a low-energy fracture sustained no later than 5 years before the start of the study was included. Patients with multiple fractures were excluded. Cost of treatment from a public payer and patient perspective in all countries except Bulgaria was estimated. These costs were compared to GDP per capita in each country (International Monetary Fund data – year 2010: 15,953 € in Slovenia, 3,522 € in Serbia) to evaluate economic burden of fractures. **RESULTS:** All Slovenian patients were hospitalized after proximal femur and 53% after vertebral fracture, compared with 84% and 30% in Serbia and 69% and 5% in Bulgaria. However, in the following years after the fracture, hospitalization was most common in Serbia (49% of patients after proximal femur and 18% after vertebral fracture yearly). The 2-year treatment cost of proximal femur fracture was 4463 € (SD 1750) in Slovenia and 3277 € (SD 2409) in Serbia, while the 2-year cost of vertebral fracture during was estimated at 3902 € (SD 2714) in Slovenia and 491 € (SD 295) in Serbia. **CONCLUSIONS:** Osteoporotic fractures are responsible for high eco-

nomic burden. Mean cost of treatment of low-energy proximal femur fracture is equal 28% of GDP per capita in Slovenia and 93% in Serbia.

PMS29

ABATACEPT OR INFLIXIMAB FOR PATIENTS WITH RHEUMATOID ARTHRITIS AND INADEQUATE RESPONSE TO METHOTREXATE: A TRIAL-BASED AND REAL-LIFE COST-CONSEQUENCE ANALYSIS

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OBJECTIVES: In the 1-year, double-blind, placebo-controlled ATTEST trial, efficacy of abatacept or infliximab vs. placebo was reported in patients with rheumatoid arthritis (RA) and inadequate response to methotrexate. We estimated trial-based and real life costs of abatacept and infliximab for achieving pre-defined remission or low disease activity state (LDAS) as recommended by the European League Against Rheumatism (EULAR). **METHODS:** Quantity of drug, serious adverse event (SAE) rates and time (months) in remission or LDAS were taken from ATTEST for the trial-based calculation to derive a cost per remitting/LDAS patient and cost per patient-month in remission/LDAS. We used list prices for drugs and public tariffs for infusion and hospitalization due to SAEs. Trial-based analyses were made for the full year, and the first and subsequent 6 months (initiation & maintenance). Maintenance costs were extrapolated to real life, taking into account dose escalation and shortening of infusion intervals with infliximab. SAE rates from a Cochrane network meta-analysis were considered in the real-life analyses. All analyses were conducted from a health care system perspective for Italy. **RESULTS:** In Italy, the annual trial-based costs per remitting/LDAS patient were €70,259/€37,219 for abatacept vs. €85,547/€46,592 for infliximab. In the initiation phase, costs per patient-month in remission/LDAS were €11,028/€6,020 for abatacept vs. €8,347/€4,173 for infliximab. Abatacept showed lower costs per patient-month in remission/LDAS in the maintenance phase €5,046/€2,673 vs. €5,500/€2,996 for infliximab. Real-life maintenance costs per month in remission/LDAS were: €5,347/€2,832 for abatacept vs. €7,210/€3,927 for infliximab. Higher initiation cost for abatacept to achieve remission/LDAS would be offset at 14.6/16.1 months during real life. **CONCLUSIONS:** Our findings suggest a lower cost-consequence for abatacept during the maintenance phase and its real-life extrapolation. Abatacept is a sustainable, safe, and economically attractive biologic for the long-term treatment of RA when compared to infliximab.

PMS30

COST-EFFECTIVENESS OF TOCILIZUMAB COMPARED TO STANDARD THERAPEUTIC SEQUENCES FOR THE TREATMENT OF MODERATE/SEVERE RHEUMATOID ARTHRITIS (RA) PATIENTS IN PORTUGAL

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OBJECTIVES: To evaluate the cost-effectiveness of treatment sequences initialized with tocilizumab 8mg/kg compared to similar treatment sequences initialized with a TNF-inhibitor for the treatment of moderate to severe RA patients with inadequate response to previous DMARD therapy (DMARD-IR) in Portugal. **METHODS:** A cost-utility analysis was conducted from a societal perspective. The analysis compares DMARD-IR patient outcomes, in three different scenarios, in a treatment sequence initialized with tocilizumab followed by a TNF inhibitor (adalimumab, etanercept, or infliximab, for scenarios 1, 2 and 3, respectively), rituximab, abatacept and palliation versus the same sequence initialized with a TNF inhibitor (etanercept, adalimumab and etanercept, respectively, for scenarios 1, 2 and 3). Patients characteristics (age, starting HAQ-DI score, sex and weight) were based on tocilizumab clinical trial data. ACR response for biologic treatments was obtained by a mixed treatment comparison. Clinical trial data was used to model the relationship between HAQ-DI scores and utility as described by EQ-5D. Resource utilization was obtained from an expert panel of Portuguese rheumatologists. Unit costs were obtained from Portuguese official sources. Analysis of clinical trial data or secondary sources provided evidence for appropriate distributions to perform probabilistic sensitivity analysis (PSA). Costs and QALYs were discounted annually at 5%. **RESULTS:** The model estimated that the treatment sequence initialized with tocilizumab resulted in higher QALYs and lower costs versus comparator sequences in all three scenarios (0.22 QALYs and -1.881€, 0.27 QALYs and -4.449€, 0.22 QALYs and -1.851€ for scenarios 1, 2 and 3 respectively). Several sensitivity and scenarios analyses showed that the model is robust to changes in parameter values. In PSA (2000 samples) the tocilizumab sequence produces always additional QALYs at lower costs. **CONCLUSIONS:** In DMARD-IR patients, the model consistently predicts that starting treatment with tocilizumab is a dominant alternative compared to similar treatment sequences initialized with a TNF-inhibitor in Portugal.

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COST-EFFECTIVENESS OF ABATACEPT FOR THE TREATMENT OF RHEUMATOID ARTHRITIS (RA) AFTER THE FAILURE OF A FIRST TNF INHIBITOR IN THE UNITED KINGDOM

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OBJECTIVES: Anti-tumour necrosis factor inhibitor (anti-TNF) therapy has been widely and successfully used in patients with rheumatoid arthritis (RA). However, about 30% of these patients have an inadequate response to these medicines. Abatacept has shown significant clinical and functional benefits in patients who have inadequate response to anti-TNF therapy. The aim of this analysis is to examine the cost-effectiveness of abatacept after the failure of a first anti-TNF. **METHODS:** A patient simulation model was constructed using clinical data from the (abatacept) ATTAIN trial and the British Society for Rheumatology Biologics Register (BSRBR). The time horizon of this model was lifetime. Clinical effectiveness was evaluated by changes in Health Assessment Questionnaire (HAQ) score from baseline up to 12 months. Patients discontinued treatment due to a lack of efficacy or adverse events. After treatment discontinuation, patients received supportive care, regardless of treatment group. Utilities were obtained by mapping HAQ to EQ-5D. Cost inputs included drug and administration, monitoring, medical costs associated with HAQ level, and joint replacement costs obtained from published literature and inflated to 2009 British pounds. **RESULTS:** Abatacept was estimated to yield 1.06 additional quality-adjusted life years (QALYs) per patient (3.28 vs. 2.22) over a lifetime, compared to conventional DMARDs. The total lifetime costs associated with abatacept were £46,522 and total costs for conventional DMARDs were £17,025, resulting in an incremental cost-effectiveness ratio (ICER) of £27,936 per QALY gained. Probabilistic and univariate sensitivity analyses confirmed the robustness of our findings. **CONCLUSIONS:** Abatacept is a cost-effective treatment option for patients with RA after the failure of a first anti-TNF in the UK.

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ECONOMIC ANALYSIS OF ETANERCEPT IN RHEUMATOID ARTHRITIS FROM A PUBLIC PERSPECTIVE IN VENEZUELA

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OBJECTIVES: Rheumatoid Arthritis (RA) leads to significant impact on management costs and patient's quality of life. In Venezuela, annual per capita cost for RA management increased from 698USD in 1997 to 3494USD in 2002. Biologic treatment after disease-modifying antirheumatic drugs fail is an alternative, but their high cost represents a challenge for decision makers. This study aims to perform cost-effectiveness and cost-utility analysis of biologic alternatives for moderate to severe RA in Venezuela. **METHODS:** An economic analysis was developed through a decision-tree model to simulate RA evolution after treatment with etanercept (basecase treatment), adalimumab, infliximab, tocilizumab or rituximab as first-line therapies and their associated costs over a 12-month time horizon. Therapy continuation or switch was evaluated at week 24. Effectiveness measures were ACR70 response and quality adjusted life years (QALYs) gained. Direct medical costs included biologics, concomitant drugs, medical follow-up and adverse events management. Clinical response was extracted from published literature, while costs were collected from Venezuelan public official databases. Probabilistic sensitivity analyses were performed through Monte Carlo Simulation second-order approach. **RESULTS:** In base case analysis estimated effectiveness resulted in [ACR70,QALY]: etanercept [31.3%,0.79]; adalimumab [18.1%,0.77]; infliximab [12.8%,0.73]; tocilizumab [21.1%,0.77] and rituximab [11.9%, 0.75]. Expected mean costs per patient were 13,588USD, 15,451USD; 15,950USD; 18,705USD and 14,350USD, respectively. In cost-effectiveness and cost-utility analysis, etanercept was the least costly and the most effective alternative being cost-saving in all comparisons: 5117USD less than tocilizumab (most costly alternative); 19.4% more patients met ACR70 response regarding rituximab (the least effective alternatives); incremental utility reached +0.0576 QALYs versus infliximab. Acceptability curves showed that etanercept regardless willingness to pay would be the most cost-effective biologic. **CONCLUSIONS:** Due to its lower costs and favorable effectiveness profile, etanercept is dominant regarding ACR70 response and QALYs gained over other biologic treatments in the management of RA at Venezuelan public health care system.

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ECONOMIC EVALUATION OF INTRAVENOUSLY IBANDRONATE FOR THE TREATMENT OF POSTMENOPAUSAL OSTEOPOROSIS IN MEXICO

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OBJECTIVES: Osteoporosis (OP) and fragility fractures (FF) significantly affect both mortality and health-related-quality-of-life, causing high costs. We aimed to determine the cost and the effectiveness of three different bisphosphonates (BP) in Mexico. **METHODS:** A six health-state life-time Markov microsimulation model was adapted to compare intravenously (IV) ibandronate 3mg injection every 3 months (IBD), oral weekly (OW) alendronate 70mg (ALD) and OW risedronate 35mg (RSD), under the perspective of the public health care system in Mexico. Target population consists of postmenopausal (PW) women over 50 years with or without prior fracture. Only direct costs were accounted for and these included drug acquisition and acute medical attention of FF. All costs are expressed in 2009 United States dollars (USD). Unit cost and antifracture efficacy was derived from published literature. Outcomes measures were the type and frequency of FF avoided with each agent compared with no treatment and quality-adjusted life years (QALY). Cost and efficacy were calculated taking into account persistence and compliance data. **RESULTS:** The avoided fractures rate was higher with IV IBD (644 per 10,000 patients Vs. 205 and 203 with ALD and RSD, respectively). When compared with OW BP, IV IBD reduced the total FF frequency in about 10%. Hence, the use of IV IBD resulted in a gain of 37 QALY per every 1,000 patients. The incremental cost per

QALY gained with IV IBD ranged from 9898 USD (vs. ALD) to 15,047 USD (vs. RSD). The gross domestic product per capita in Mexico during 2009 was estimated at 8337 USD. Results were robust to variation in all parameters. **CONCLUSIONS:** By reducing significantly the number of doses needed per year, IV IBD improves adherence and decrease the expected frequency of FF in comparison with OW BF. These results suggest that IV IBD is a cost-effective intervention for PM OP in Mexico.

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COST-EFFECTIVENESS ANALYSIS OF BIO- HYALURONIC ACID (HA) IN PATIENTS WITH KNEE OSTEOARTHRITIS IN MEXICO

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BACKGROUND: Osteoarthritis (OA) is the most common rheumatic disease in the world and one of the main causes of joint pain and disability of the adult population; it therefore represents an important use of medical resources for the institutions and compromises the quality of life of patients. **OBJECTIVES:** To analyze the cost-effectiveness of Bio-HA vs. Hilano G-F20 in patients with knee osteoarthritis. **METHODS:** We conducted an economic evaluation. The alternatives to compare were Bio-HA vs Hilano, administered three weekly injections, with follow-up evaluations at week 12. The perspective is the Mexican Social Security Institute (IMSS). The economic model included the cost of drug acquisition and management of adverse events (AE). The use of resources associated with each AE was defined according to a Delphi Panel. The efficacy measure was the proportion of patients with OMERACT-OARSI response, obtained from a head to head analysis (Onel E, 2008). **RESULTS:** The response rates for Bio-HA were 71% versus 63% for Hilano. The knee effusions in patients treated with Bio-HA was 0.6% (MX\$39) vs. Hilano 8.1% (MX\$531). The cost per patient treated for each alternative was MX\$7728 and MX\$8338 for Bio-HA and Hilano, respectively. The cost per responder patient was lower for Bio-HA than Hilano, MX \$10,885 and MX \$13,236, respectively. So, the savings generated by Bio-HA are very high. If we consider the 1,000 patients for each alternative, the savings would be MX\$610,000 and this money be useful to purchase an extra 122 cycles of treatment with Bio-HA or to be reassigned for other therapeutic areas. Considering all the above Bio-HA proved to be a dominant strategy (less costly and more effective). **CONCLUSIONS:** The results of this pharmacoeconomic analysis suggest that the use of Bio-HA in patients with OA is a cost-saving strategy for the institutions of public health in Mexico.

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A COST-EFFECTIVENESS ANALYSIS OF DENOSUMAB FOR THE TREATMENT OF POST-MENOPAUSAL OSTEOPOROSIS IN GREECE

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OBJECTIVES: To evaluate the cost-effectiveness of denosumab compared to supportive care (no active osteoporosis treatment), alendronate, ibandronate, risendronate and strontium ranelate for the treatment of women with post-menopausal osteoporosis (PMO) in Greece. **METHODS:** An 8-state, 6-month cycle Markov cohort model was developed in order to estimate costs and effects, i.e. reductions in fracture occurrence, of denosumab vs. comparators for a 5year period, from a third-party payer perspective (Euros, 2011). The model was populated according to the characteristics of the FREEDOM clinical trial population (mean age: 72.3, prevalence of vertebral fracture: 23.6%, femoral neck T-score ≤ -2.5), that also provided the data on efficacy of denosumab. Data on efficacy (relative risk of fractures) for the comparators were taken from a published meta-analysis. The model took into account treatment persistence across all comparators, as well as a 2year residual effect of treatment after discontinuation. **RESULTS:** The base-case analysis showed that the incremental cost per QALY gained with denosumab was €18,813, €24,784, €13,727, €18,436 and €11,114 versus no treatment, alendronate, ibandronate, risendronate and strontium ranelate, respectively. The probabilistic sensitivity analysis demonstrated that denosumab was cost-effective in an implicit €30,000 threshold for 81.6% of the iterations versus no treatment and risendronate, 63.4% versus no treatment and alendronate and 88.2% versus no treatment and ibandronate. Univariate sensitivity analyses showed that changes in persistence rates, baseline age and T-score where the factors with the most significant influence in the results. **CONCLUSIONS:** In a disease that entails a significant morbidity and socioeconomic burden, denosumab seems to be a cost-effective alternative to established treatment regimens for osteoporosis in Greece.

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ECONOMIC ANALYSIS OF ETANERCEPT IN RHEUMATOID ARTHRITIS FROM A PUBLIC PERSPECTIVE IN COLOMBIA

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OBJECTIVES: Rheumatoid Arthritis (RA) leads to significant impact on management costs and patient's quality of life if no therapeutic measure is adopted and represents one of five most common incapacity causes in women aged 15-44 years, in Colombia. Biologic treatment after disease-modifying antirheumatic drugs fail is an alternative, but their high cost represents a challenge for decision makers. This study aims to perform cost-effectiveness and cost-utility analysis of biologic alternatives for moderate to severe RA in Colombia, from a public perspective. **METHODS:** An economic analysis was developed through a decision-tree model to