URINARY & KIDNEY DISEASES/DISORDERS—Economic Outcomes

ASSESSING PROVIDER TIME FOR ANAEMIA MANAGEMENT OF DIALYSIS PATIENTS USING TIME & MOTION METHODS: A MULTI-CENTRE OBSERVATIONAL STUDY IN EUROPE
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OBJECTIVE: Estimate the provider time allocated to the management of anaemia with rHuEPO in dialysis centres throughout Europe. METHOD: The same time and motion protocol was used in nine dialysis centres in five European countries (Netherlands, Germany, France, Spain and Italy). Structured interviews with key personnel were used to obtain an overview of all rHuEPO related activities performed by physician, nurse, health auxiliaries, lab and pharmacy personnel. Strict start and end points were defined for frequent activities (n/week > 1). Time devoted to these activities was measured by a trained centre nurse with a chronometer. Time devoted to less frequent activities (n/week < 1) was estimated from interviews. Nurse and physician time analysis by dialysis centre is reported. To compare time measured across the different centres, activities were regrouped into three main tasks for nurses (rHuEPO administration; blood sampling; other rHuEPO management) and two for physicians (anaemia monitoring and drug & blood prescription). RESULTS: Average time for rHuEPO management per session by nurse and physician combined was 3 min 32 sec (Min: 1 min 47 sec; Max: 6 min 34 sec). The observed time differences were explained by the differences in tasks to be accomplished by nurses such as getting drug and lab prescriptions, lab results, supplies, billing the drug, getting the drug from pharmacy. Estimated average time per year for rHuEPO management of 50 dialysis patients with 3 rHuEPO sessions per week is therefore 503 hours ((3.87 min × 50 × 3 × 52)/60). Switching to one session per week with darbepoetin alfa (AranespTM) will gain an estimated 350 hours per year for nurse and physician combined. CONCLUSION: With fewer injections needed with AranespTM for anaemia management in dialysis centres, substantial time gain per year may occur in each centre.

COSTS OF CHRONIC KIDNEY DISEASE (CKD): COST AND COMORBIDITY
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OBJECTIVES: We examined the incremental cost of CKD over a 66-month period, and the contribution of CKD-related comorbidity to the cost of care. METHODS: Using electronic medical record data at a large HMO, we calculated inpatient, outpatient, pharmacy and total costs for 13,796 cases and 13,796 matched (age and gender) controls. Cases were patients whose glomerular filtration rates (GFR, ml/min/1.72m2) were <90 on two consecutive measurements (at least 90 days apart) in 1996. Cases were divided into stages 2, 3 and 4 based on new guidelines from the National Kidney Foundation. Patients were followed until death, initiation of renal replacement therapy (RRT), or July 1, 2001. CKD-related comorbidities were identified (diabetes, congestive heart failure, coronary artery disease, anemia and hypertension) based on ICD9 codes. RESULTS: Patients with CKD were 1.9 to 2.5 times more likely (depending on stage) than controls to have been treated with prescription drugs, had more outpatient visits (1.3 to 1.9 times more than controls, across stages), and had 1.8 to 3.1 more inpatient stays than did controls. CKD-related comorbidities almost double the total cost of care for both cases and controls, and cases with no CKD-related comorbidities are about twice as expensive to manage as controls with no CKD-related comorbidities. CONCLUSION: We found that CKD doubles costs to the health care system, and that comorbidities related to CKD contribute more to the cost of managing these patients than does CKD alone. Future research in this area could be usefully directed toward analyzing the clinical and economic consequences of better managing patients with CKD.

BRANDED VS GENERIC CYCLOSPORINE IN DE-NOVO KIDNEY TRANSPLANTATION—WHERE ARE THE COST SAVINGS?
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OBJECTIVE: Cyclosporine introduction for immunosuppressive therapy in the early 1980s has improved graft survival fundamentally. In the last few years generic cyclosporines, suggesting similar pharmacokinetics to branded cyclosporines, were introduced in several markets. The economic implication with respect to graft survival rates using branded or generic cyclosporine is described in the following for Germany. METHODS: The Collaborative Transplant Study recently (2001) presented a survey of all actively forwarded one-year-graft-survival data for kidney transplantation, using either branded or generic cyclosporine in de-novo transplantations between 1998 and 2000. With 16,800 patients in the branded and nearly 400 in the generic arm the 10% increase in graft loss in the generic arm was not statistically significant but clinically relevant. The cost analysis of kidney graft loss
for each month following transplantation took into account only direct costs arising from transplantation (€3,153, procedural rate plus daily hospital rate) and dialysis (€3,687 monthly, Kupsch et al. 1998). RESULTS: Based on these data, the average annual costs of a graft loss are calculated. Consequently, an average patient treated with cyclosporine brand medication leads to additional annual costs of €4,239 due to graft loss. In patients treated with a generic formulation these costs amount to €7,832. The resulting cost differential of €3,593 per year implies that a generic cyclosporine formulation would have to be at least 61% cheaper than a brand regimen (currently €5,675 p.a.) in order to be at least cost neutral. CONCLUSION: Focusing only on direct costs of graft loss not including e.g. rescue medication, the above calculation is extremely conservative. Cost savings potentially achievable by means of a generic treatment regimen will most likely be consumed by significant costs resulting from graft loss unless the generic is more than 61% cheaper than brand medication. This ratio will worsen considerably if the costs for retransplantation are taken into account.

PRK4

AN ECONOMIC MODEL OF UNSTABLE BLADDER IN BELGIUM
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OBJECTIVE: An economic model was developed to estimate the comparative cost-effectiveness of treating unstable bladder (UB) in Belgium with alternative drug treatments and no treatment. The model uses a one-year timeframe and the payer (e.g., Riziv/INAMI, Sickness funds) perspective. METHODS: The study population included patients seeking UB treatment and was divided into successfully treated patients (STP) and patients failing treatment (PFT). The percentage of STP was calculated from clinical efficacy adjusted by annual persistence. For each group of patients, direct and indirect costs were identified, including costs for drugs, incontinence pads, physician visits, laboratory tests, and associated comorbidities. Resource utilization and costs were obtained from literature, the National Health Insurance System, official Public Price Ministry Economic Affairs/Pharmaceutical Tarification, clinical trials, and expert medical panels. RESULTS: The prevalence of UB sufferers in Belgium was estimated to be 3% in 2002 (approximately 303,000 people), with only 30% of those patients seeking treatment (approximately 1% of the Belgian population). STP used fewer pads per day, visited physicians less frequently, had fewer lab tests/diagnostics, and experienced fewer comorbidities than PFT. Cost drivers in the model were comorbidities and physician visits. Tolterodine sustained-release (TSR) had comparable efficacy to oxybutynin, but persistence on therapy was higher for TSR. Therefore, effectiveness was higher for TSR versus oxybutynin (37% for TSR, 10% for oxybutynin). Effectiveness was considered 0% for no treatment. Cost per STP was €1,167 for TSR and €2,181 for oxybutynin. Sensitivity analyses varying efficacy and persistence by 10% still resulted in a lower cost per STP for TSR. TSR had an incremental cost-effectiveness of €816. The “no treatment” group demonstrated the highest non-drug costs while providing no efficacy. CONCLUSION: Tolterodine sustained-release is a more cost-effective treatment than oxybutynin in treating UB as measured by cost per successfully treated patient in Belgium.

PRK5

A STRAIGHTFORWARD COST-EFFECTIVENESS ANALYSIS OF LONG-ACTING TREATMENTS FOR OVERACTIVE BLADDER: CAN IT BE THIS SIMPLE?
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OBJECTIVES: Several researchers have estimated the cost-effectiveness (CE) of long-acting forms of tolterodine (TOL) and oxybutynin (OXY) in overactive bladder (OAB). Typically, it’s assumed that effectively treated patients consume fewer resources, including incontinence pads, physician visits, laboratory tests, and costs related to comorbid conditions. Claims analyses have shown a link between the presence of OAB and higher medical costs; however, no prospective studies have evaluated the effect of treatment on resource consumption, and drug acquisition cost (DAC) continues to be the focus for many decision-makers. A head-to-head patient outcome trial comparing TOL and OXY was recently completed, the Antimuscarinic Clinical Effectiveness Trial (ACET); however, resource consumption wasn’t collected. Our objective was to determine the CE of TOL 4 mg and OXY 10 mg based on DAC and effectiveness data from ACET. METHODS: The primary effectiveness endpoint in ACET was patient perception of improvement in their bladder condition after eight weeks of treatment. Results showed that 70% of TOL patients and 60% of OXY patients reported improvement in their bladder condition at 8 weeks. Dropout rates were 11.6% and 20.5% for TOL and OXY, respectively. We assumed dropouts completed four weeks of treatment. The daily AWP cost of TOL 4 mg and OXY 10 mg was $2.7967 and $2.6875, respectively. RESULTS: For every 100 patients treated with TOL and OXY, DAC is $14,752.98 and $13,507.38, respectively. The cost per effectively treated patient for TOL is $210.76 and $225.12 for OXY. The incremental CE for TOL is $124.56 per additional effectively treated patient. CONCLUSIONS: When only DAC is considered, TOL is more cost-effective than OXY. If effectively treated patients do consume fewer resources, then the CE of TOL should be even better. Determining