2006 were identified and categorized into two groups: with DM and without DM. Patients with complete insurance coverage and medication information 1-year prior and post the index hospitalization were included. Annual health care costs (in 2008 US dollars) and resource utilization were compared for both groups (All p < .001 unless otherwise stated). RESULTS: Of 12,502 patients who met the study criteria, 3,040 (24%) were diabetic and 9,462 (76%) were non-diabetic. Higher percent of diabetic patients had at least one all-cause hospitalization event (49.0% vs. 35.2%) or cardiovascular-related hospitalization event (45.3% vs. 32.3%). Mean length of stay (LOS) was longer for diabetic patients during the index hospitalization (4.3 days vs. 3.3 days), as well as during the rehospitalization event (all-cause: 4.6 days vs. 3.3 days; cardiovascular-related: 4.6 days vs. 3.3 days). In addition, patients with DM had more physician’s office visits (16.3 vs. 12.4), ER visits (0.8 vs. 0.5), and outpatient hospital visits (9.0 vs. 7.1) during the 12-month follow-up period. Both cohorts had similar index ACS hospitalization costs ($32,026 vs. $29,082) but diabetic patients incurred higher rehospitalization costs (all-cause: $19,913 vs $10,947; cardiovascular-related: $18,256 vs. $10,091), outpatient costs ($14,836 vs. $8,617) and pharmacy costs ($6,105 vs. $3,921). One-year follow-up health care costs were significantly higher for patients with DM compared with those without DM ($40,853 vs. $23,485). CONCLUSIONS: The presence of DM significantly increases health care costs and resource utilization for ACS patient.

OBJECTIVES: To examine the cost impact of atrial fibrillation (AFib) in patients with atherothrombotic diseases in a German statutory health insurance population. METHODS: Study design: A retrospective review of the medical, hospital and pharmacy claims database of a German statutory health insurance company. We reviewed pharmacy and medical claims data for the years 2004-2005 from an insurance covering about 5 Mio insureds. The data of patients suffering from cardiovascular diseases (myocardial infarction, stroke or PAD) were available. By using the documented ICD-10 codes (488,10,148,11, and 148,19) for hospitalizations we identified patients who experienced Afib during 2004 and 2005. For these patients we reviewed all the charges incurred for a one-year period after the initial index event on the basis of weekly costs and from the third party payer’s perspective. RESULTS: A total of 14,798 patients (mean age: 72 ± 10 years) with Afib could be included in the analysis. The majority of the patients (55%) were female. The cost for atrial fibrillation patients for one year was €7690. The largest portion of the total cost (78%) resulted from the costs for hospitalization while the initial hospital stay was associated with 30% of total costs. Approximately 100% of the study population received prescription drugs at an average cost of €3153 per prescription drug user. Comparison of the total costs before the initial diagnosis of Afib, the costs increase by the factor 1.4 during the first year after the event. The majority of costs one year after the event arise during the first 10 weeks (approx. 50%). CONCLUSIONS: An acute Afib event in patients with atherothrombotic diseases results in a significant financial burden from the perspective of the statutory health insurance population. Improved management of the condition is needed to reduce the cost of treatment associated with AF.

OBJECTIVES: To measure the cost of disease from the governmental perspective of patients with resistant hypertension as defined by the American Society of Hypertension. We used a bottom-up approach to cost estimation, and to explore the causes of any differences found. METHODS: The health care costs of obesity were estimated from 2819 participants recruited into the nation-wide Australian REACH Registry with established atherothrombotic disease or at least three risk factors for atherothrombosis. Enrolment was in 2004, through primary care general practices. Information was collected on the use of cardiovascular drugs, hospitalisations and ambulatory care services. Bottom-up costing was undertaken by assigning unit costs to each health care item, based on Australian Government-reimbursed figures 2006-2007. Generalised linear for working adults were used to estimate associations between direct medical and BMI categories. RESULTS: Annual pharmaceutical costs per-person increased with increasing BMI, even after adjusting for gender, age, living place, formal education, smoking status, hypertension and diabetes. Adjusted annual pharmaceutical costs of overweight and obese patients were higher ($83 (p = 0.006) and $142 (p = 0.001) respectively) than those of the normal-weight patients. This was due to patients in higher BMI categories receiving more pharmaceuticals than normal-weight patients with the same condition. There was no significant change across the BMI categories in annual ambulatory care costs and annual hospital costs. CONCLUSIONS: In these patients with, or at high risk of, atherothrombotic disease, annual pharmaceutical costs were greater in patients with higher BMI, but there was no such gradient in annual hospital or ambulatory care costs. The greater cardiovascular pharmaceutical costs for patients of higher BMI remained even after adjusting for a range of demographic factors and comorbidities, and our results suggest that they are explained by a higher number of drugs used for the same condition. Further investigation is needed of the reasons for this level of drug utilisation.

OBJECTIVES: To examine the impact of lost therapeutic benefit (LTB) in high risk patients managed for hypertension in Australia. METHODS: A retrospective review of the medical, hospital and pharmacy claims database of a German statutory health insurance company. We reviewed pharmacy and medical claims data for the years 2004-2005 from an insurance covering about 5 Mio insureds. The data of patients suffering from cardiovascular diseases (myocardial infarction, stroke or PAD) were available. By using the documented ICD-10 codes (488,10,148,11, and 148,19) for hospitalizations we identified patients who experienced Afib during 2004 and 2005. For these patients we reviewed all the charges incurred for a one-year period after the initial index event on the basis of weekly costs and from the third party payer’s perspective. RESULTS: A total of 14,798 patients (mean age: 72 ± 10 years) with Afib could be included in the analysis. The majority of the patients (55%) were female. The cost for atrial fibrillation patients for one year was €7690. The largest portion of the total cost (78%) resulted from the costs for hospitalization while the initial hospital stay was associated with 30% of total costs. Approximately 100% of the study population received prescription drugs at an average cost of €3153 per prescription drug user. Comparison of the total costs before the initial diagnosis of Afib, the costs increase by the factor 1.4 during the first year after the event. The majority of costs one year after the event arise during the first 10 weeks (approx. 50%). CONCLUSIONS: An acute Afib event in patients with atherothrombotic diseases results in a significant financial burden from the perspective of the statutory health insurance population. Improved management of the condition is needed to reduce the cost of treatment associated with AF.

ECONOMIC IMPLICATIONS OF OBESITY AMONG PEOPLE WITH ATHEROTHROMBOTIC DISEASE IN AUSTRALIA

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OBJECTIVES: To measure the cost of disease from the governmental perspective of patients with resistant hypertension as defined by the American Society of Hypertension. We used a bottom-up approach to cost estimation, and to explore the causes of any differences found. METHODS: The health care costs of obesity were estimated from 2819 participants recruited into the nation-wide Australian REACH Registry with established atherothrombotic disease or at least three risk factors for atherothrombosis. Enrolment was in 2004, through primary care general practices. Information was collected on the use of cardiovascular drugs, hospitalisations and ambulatory care services. Bottom-up costing was undertaken by assigning unit costs to each health care item, based on Australian Government-reimbursed figures 2006-2007. Generalised linear for working adults were used to estimate associations between direct medical and BMI categories. RESULTS: Annual pharmaceutical costs per-person increased with increasing BMI, even after adjusting for gender, age, living place, formal education, smoking status, hypertension and diabetes. Adjusted annual pharmaceutical costs of overweight and obese patients were higher ($83 (p = 0.006) and $142 (p = 0.001) respectively) than those of the normal-weight patients. This was due to patients in higher BMI categories receiving more pharmaceuticals than normal-weight patients with the same condition. There was no significant change across the BMI categories in annual ambulatory care costs and annual hospital costs. CONCLUSIONS: In these patients with, or at high risk of, atherothrombotic disease, annual pharmaceutical costs were greater in patients with higher BMI, but there was no such gradient in annual hospital or ambulatory care costs. The greater cardiovascular pharmaceutical costs for patients of higher BMI remained even after adjusting for a range of demographic factors and comorbidities, and our results suggest that they are explained by a higher number of drugs used for the same condition. Further investigation is needed of the reasons for this level of drug utilisation.

THE IMPACT OF LOST THERAPEUTIC BENEFIT (LTB) IN HIGH RISK PATIENTS MANAGED FOR HYPERTENSION IN AUSTRALIAN GENERAL PRACTICE

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OBJECTIVES: Lost Therapeutic Benefit (LTB) (receiving medication without attaining target BP levels) may lead to increased morbidity and mortality due to cardiovascular disease. Objectives of this study were to estimate the extent of LTB in patients at high risk of atherothrombotic events and to model the impact of attaining target BP levels in LTB patients on cardiovascular event rates over a two-year period. METHODS: The Australian REACH registry consists of 2872 high-risk patients of which 2856 (99.4%) were followed for cardiovascular events over a two-year period. The mean...
age was 72.8 ± 8.9 yrs, 65.1% were male and 78.7% had a history of hypertension. LTB was calculated as the proportion of patients receiving antihypertensive therapy who were not attaining guideline BP control targets. A hypertensive intervention to lower blood pressure to the normal range was applied to those individuals identified with the number of cardiovascular disease events which could be prevented. Logistic regression was used to find the predictors of LTB and event rates were compared using Chi squared tests. RESULTS: Among the 2856 Australian REACH participants, 70.1% (n = 2002) had uncontrolled blood pressure (>130/80 mmHg) and 88.3% (2022) had been taking antihypertensive medication. LTB was 70.7% (1784). The major univariate predictors of LTB were gender, age, diabetes, hypertension, carotid plaque, cholesterol, BMI and congestive heart failure. Assuming a hypertensive blood pressure intervention is applied to the LTB group resulting in controlled blood pressure (<130/80 mmHg), 9 cardiac events per 1000 people and 21 cardiac events per 1000 people including coronary heart disease intervention per 1000 people could be prevented. CONCLUSIONS: Improving BP control in patients receiving antihypertensive medication may prevent 8 cardiac events per 1000 people and 21 CV events per 1000 people within this study group. At a population level, this would represent a major cardiovascular event reduction strategy.

RELATIONSHIP BETWEEN THE COST AND HOSPITAL QUALITY

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OBJECTIVES: Improved surgery is a major component of overall health care spending. We examined variation in outlier payment across US hospitals and the extent to which variation is explained by quality of care. METHODS: We used the 2006 Medicare Provider Analysis and Review (MEDPAR) file. We identified coronary artery bypass grafting (CABG) procedure codes. We describe the incidence of outlier payments across CABG, average outlier payment amount and their contribution to overall inpatient payments. We then explore how outlier payments vary according to patient characteristics and across hospitals. Multiple logistic regression is used to examine to what extent these factors influence the incidence of outlier payments. Standard errors are adjusted for the effect of clustering of outlier payments within hospitals. In assessing variation in outlier payments across hospitals, we described the distribution of outlier payment prevalence (proportion of patients associated with outlier payments) by hospital. We, then assessed hospital variation using fixed-effects logistic regression models. RESULTS: The proportion of patients associated with outlier payment was 11%. Average outlier payments were considerable: $26,064. Outlier payment for CABG cost CMS approximately $480 million in 2006. Outlier payments vary across CABG contributors to the overall inpatient cost: 12.9%. Approximately 20% of hospitals had outlier rates below 5% for coronary artery bypass surgery, while 25% had outlier rates exceed 20%. Although, there were patient level risk factors that determine patient level outlier payment rates, this did not explain hospital level variation. Higher volume hospitals were less likely to have patients with outlier payments. CONCLUSIONS: Aiming to accelerate the quality improvements, payers are increasingly applying value-based purchasing strategies to surgical care. We showed that the variation in outlier payments across US hospitals is substantial for CABG and patient level risk factors cannot explain hospital level variation. Hospital and surgical volume as a quality indicator is negatively related with outlier payments.

AN ASSESSMENT OF THE COST OF PERCUTANEOUS PULMONARY VALVE IMPLANTATION USING MELODY VERSUS SURGICAL VALVE REPLACEMENT IN PATIENTS WITH RIGHT VENTRICULAR OUTFLOW TRACT DYSFUNCTION

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OBJECTIVES: To assess the cost of percutaneous pulmonary valve implantation (PPVI) – a new procedure introduced in 2009 as a less invasive treatment for right ventricular outflow tract dysfunction (RVOT) and, the cost of surgical valve replacement in patients with right ventricular outflow tract dysfunction using a cohort simulation model. METHODS: A cost analysis was performed from the perspective of the purchaser (the UK NHS). The cost of PPVI was estimated using data based on a total of 141 patients who had undergone PPVI from 2000 to 2008. The cost of surgical valve replacement in a similar group of patients was estimated using a cohort simulation model populated with data drawn from the literature and expert opinion, given that PPVI has supplanted this procedure in the clinical setting analysed. The model is a cohort simulation model and assesses the cost of surgery using a hypothetical population of 1000 individuals with right ventricular outflow tract dysfunction starting when their first validated biological conduit was surgically placed and following them for a period of 25 years assuming that 1) PPVI is not available as an option, and 2) that PPVI is available for those eligible for it. RESULTS: The model resulted in an estimate of mean cost per patient of £5276 in the absence of PPVI and in an estimate of mean cost per patient of £7958 in the presence of PPVI over the 25 years period of analysis. CONCLUSIONS: PPVI although more costly than the surgical alternative, appears to be an effective and safe treatment that prevents surgery and a marginal cost of $466 in comparison to the LTB group resulting in controlled blood pressure (130/80 mmHg), 8 cardiac events per 1000 people and 21 cardiac events per 1000 people including coronary heart disease intervention per 1000 people could be prevented. CONCLUSIONS: Improving BP control in patients receiving antihypertensive medication may prevent 8 cardiac events per 1000 people and 21 CV events per 1000 people within this study group. At a population level, this would represent a major cardiovascular event reduction strategy.

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