OBJECTIVES: Health care workers are a population at risk of Late Tuberculosis Infection (LTI), which is usually detected by the Tuberculin Skin Test (TST). In vitro immunological tests such as QuantIFERON-TB Gold® (QFT-G) have been recently recommended for LTI screening in health care workers. We compared direct and indirect costs of two LTI screening strategies among health care workers in Spain: TST and QFT-G.

RESULTS: A comparative cost study conducted from a societal perspective, using data on costs and results from a prospective observational study carried out in a Spanish public hospital, where the 2 screening alternatives were concurrently applied to a cohort of 134 health care workers. RESULTS: In a base-case analysis, the costs of the QFT-G test amounted $42.5 per screened health care worker and those of the TST $39.3. Both tests varied in their cost structure: in the case of TST, most of the total costs (70%) were indirect costs, basically time spent by the participants, whereas QFT-G was more expensive in terms of fungible material, which meant 50% of the total costs. The results are sensitive to the hourly wages of the participants and to the estimation of the time spent by them in the tests. CONCLUSIONS: This cost study showed that, in the conditions of Spanish health care system, the societal costs of the new QFT-G are comparable to those of the TST; however, their cost structures vary considerably. Therefore, these results could change if applied in other countries with different relation between salaries and prices.

PSEUDOMONAS AERUGINOSA RELATED BURDEN ON CYSTIC FIBROSIS PATIENTS: COMPARING HEALTH CARE COSTS AND RESOURCE UTILIZATION ACROSS AGE GROUPS

OBJECTIVES: To determine if the average cost of medical care among cystic fibrosis (CF) patients with Pseudomonas aeruginosa (PA) infection is different across age groups.

METHODS: Data were derived from MarketScan claims database, which captures person-specific direct medical utilization, expenditures, and enrollment from approximately 150 payers. A retrospective cross-sectional study design was used. CF patients with an initial claim for a PA infection were included. The incidence of PA infection in the CF population was 103/1000 patients/year. Characteristics of patients with PA infection were compared with those without PA infection. All resource use and costs were annualized and compared across 7 age groups with parametric (ANOVA) and Duncan’s post-hoc tests using SAS version 9.2.

RESULTS: A total of 347 CF subjects with PA infection met the study criteria with mean age 19.9 (SD: 15.4) years and 47.8% females. A monotonic trend of increasing costs (P < 0.05) over past period costs was observed across the 7 age groups. Example: children 0–4 years had the lowest (P < 0.05) overall past costs of $31,169 (median = $22,287) vs. $59,024 (median = $36,783) for adults 45–64 years. A similar trend with the PA incidence group 30–44, was observed with PA-related costs as well. Mean and median per patient over PA-related costs were lowest in children 0–4 years ($12,472, $3,572) compared to the oldest age-group of 45–64 years ($26,673, $3,311). In general, total prescription claims and outpatient visits, and PA-related inpatient costs were increased with increasing age groups. Among children, PA-related prescription claims were statistically higher. For example, mean PA-related prescription claims were 1.4 vs. 3.8 in the 0–4 vs. 15–19 groups (P < 0.05). CONCLUSIONS: Overall PA-related health care resource use and costs tended to vary across age groups. Future research needs to explore the underlying reasons for this trend.

LONG-TERM ECONOMIC AND CLINICAL BURDEN OF COMPLICATED INVASIVE MENINGOCOCCAL DISEASE: EVIDENCE FROM A UNITED STATES MANAGED CARE POPULATION

OBJECTIVES: There is a paucity of data on the long-term (i.e., post-hospital discharge) economic and clinical burden of invasive meningococcal disease (IMD) and its related complications among IMD survivors. The objective of this study was to compare health care utilization and costs between IMD survivors with and without related complications. METHODS: We conducted a retrospective cohort analysis of the Ingenix Impact database (1997–2009). Patients with an inpatient admission for IMD (ICD-9-CM: 036.x) and those of the TST and QFT-G were compared between patients in the complicated and uncomplicated IMD groups using univariate and multivariable regression analyses. RESULTS: Among 343 IMD patients identified, stroke (14.3%), seizure (11.7%) and hearing loss (10.5%) were the most commonly observed complications, with 34.1% experiencing ≥1 complication. Significant differences in health care utilization and costs were observed, with the largest between-group difference in follow-up costs being for inpatient services mean [95% CI]: $72,512 [$64,439] for complicated cases versus uncomplicated IMD; P < 0.001). Large differences were also observed for rehabilitative services ($24,403 [$21,418] vs. $15.9 [$11.6]; P < 0.05) and total health care costs ($97,854 [$97,248] vs. $32,239 [$1,611]; P < 0.001). Risk of re-hospitalization following admission was higher in complicated IMD patients (hazard ratio = 1.69 [95% CI] = 1.04–2.74) vs. uncomplicated cases. CONCLUSIONS: Driven mainly be the need for repeat hospitalization, the presence of serious complications in cases of IMD increased health care utilization and costs by almost 3 fold compared to uncomplicated cases during 12 months post-diagnosis.

COST-OF-ILLNESS OF CANDIDEMIA IN KOREA

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OBJECTIVES: This study sought to estimate the direct medical costs associated treating candidemia in Korea. METHODS: This incidence based, cost-of-illness study collected retrospective data of 200 patients in 4 tertiary hospitals. The cost data targeted for adult patients (>19 years) diagnosed as candidemia through blood culture. We assessed the costs attributable to candidemia by examining resources utilization during candidemia treatment period. To the end, the medical costs were derived from the quantity of resource utilization by unit cost of accounting resource. RESULTS: The enrolled patients were 54.0% male, average 65.3 yrs old. The average length of stay attributable to candidemia was 163.6 days. After 6 weeks follow up, only 2 patients were relapsed, otherwise all-case mortality rate was 66.6%. The estimated average direct medical costs of candidemia were KRW 4,723,160. The resources consisted of hospitalization (KRW 1,308,521, 27.7%), medication (KRW 1,310,739, 27.8%), lab test (KRW 489,818, 10.4%), imaging test (KRW 157,633, 3.3%), procedure/surgery (KRW 113,774, 2.4%) and other medical treatment (KRW 1,342,675, 28.4%). The main occupied costs were those of hospitalization, medication and when other medical treatment resources (e.g. hemodialysis, blood transfusion) were utilized, the costs tended to sensitively increase. According to admission type, costs for ICU (SICU: n = 24, KRW 8,337,825, MCIU: n = 51, KRW 6,914,280) were higher than those for general ward (n = 125), KRW 3,019,167. Analysis by baseline disease/condition revealed that the costs for transplant (n = 8, KRW 10,070,472), HIV/AIDS (n = 2, KRW 25,426,018) were higher than others (cancer: n = 103, KRW 3,658,142, central catheterization: n = 101, KRW 5,554,510, surgery: n = 68, KRW 5,050,941). The costs for Calbicains (n = 90) were KRW 3,878,166 and for non Calbicains (n = 110) were KRW 5,414,518. CONCLUSIONS: This study is significant in that it estimated cost-of-illness of candidemia by examining the health resources consumption and assessing the costs attributable to candidemia.

THE ECONOMIC BURDEN OF SURGICAL SITE INFECTION USING THERAPEUTIC ANTIBIOTIC UTILIZATION MEASURE—COMPARISON BETWEEN TWO TIME PERIODS

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OBJECTIVES: Significant attention is being focused on reducing surgical site infections (SSI) in the US and numerous national initiatives have been put into place to achieve measurable reductions. The purpose of the study was to examine the economic impact of therapeutic antibiotic (TA) utilization as an indicator of postoperative SSI between two time periods. METHODS: Premier inpatient database was utilized for assessing length of stay (LOS) and costs. Two time periods identified, 2003–2008 (period 1) and 2009 (period 2) with 1,138,989 patients discharged in 2005–2008 and 305,073 discharged in 2009. In the patients with non-SSI nosocomial infections were excluded. TA usage was determined by the antibiotic administration after day 4 of surgery. TA utilization rate 0.61% in 2005–2008; 0.75% in 2009. Multivariate analysis used to assess the effects of using TA on LOS and total costs outcomes. RESULTS: Patients receiving TA had significantly higher LOS and costs for both time periods (P < 0.001). Average LOS for patients receiving TA was 12.2 and 12.6 for periods 1 and 2 respectively. Mean post-surgical LOS was 9.8 and 10.0. Patients not receiving TA had average LOS of 4.6 and 4.6 in periods 1 and 2 and mean post-surgical LOS was 3.9 and 3.8 for periods 1 and 2. Mean (SD) total costs for TA patients were significantly higher, $28,601 ($11,892) in period 1 and $32,751 ($38,194) in period 2 compared to $15,336 ($13,406) and $15,412 ($20,311) for patients not receiving TA. Predictors for significantly higher risk of TA use included General Surgery, Non-cardiac Thoracic procedures, bed-size under 500 or Rural, and Staples or Non-absorbable sutures usage. CONCLUSIONS: These findings suggest significant impact on the SSI economic outcomes based on similar trends in antimicrobial utilization, costs and LOS over time. Further studies are warranted assessing the role of innovative technology to improve patient outcomes while reducing antibiotic utilization and LOS.