

INFECTIOUS DISEASE OUTCOMES RESEARCH

C. ALBICANS AND C. GLABRATA BLOODSTREAM INFECTIONS IN ADULTS: OUTCOMES AND ASSOCIATED COSTS

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OBJECTIVE: Mortality and economic consequences associated with *Candida* bloodstream infections are considerable, and the incidence of *Candida glabrata* infections is increasing. This investigation aimed to evaluate inpatient costs, length of stay (LOS), and mortality associated with candidemia in adults ≥ 18 years, focusing on differences between *Candida glabrata* and *Candida albicans*. **METHODS:** The study cohort consisted of all patients hospitalized at Duke University Medical Center from February 1996 to July 2007 with a blood culture positive for *C. glabrata* or *C. albicans*. Patients were stratified according to whether their first positive culture occurred within the first two days of hospital admission or thereafter. Detailed cost accounting data were available since December 2002. Generalized linear models using gamma distributions and log links were used to compare costs, negative binomial models for LOS, and chi-square tests for inpatient mortality. **RESULTS:** A total of 241 adults with *C. glabrata* and 402 adults with *C. albicans* bloodstream infections were identified. Complete data on LOS was available for 99.1% and cost data for 38.1%. Approximately 20% of patients had a positive blood culture within the first two days of admission (*C. glabrata*, 18.7%; *C. albicans*, 21.1%). Among these patients, those with *C. glabrata* versus *C. albicans* had longer LOS (19.7 days vs. 14.2 days, $p = 0.03$), higher costs (\$56,026 vs. \$31,168, $p = 0.02$), and comparable mortality rates (33.3% vs. 35.3%, $p = 0.82$). Among patients in whom the first positive blood culture occurred later, LOS (22.0 days vs. 20.1 days, $p = 0.29$), costs (\$68,280 vs. \$51,688, $p = 0.06$) and inpatient mortality (48.5% vs. 44.8%, $p = 0.42$) were more similar. **CONCLUSION:** *Candida* bloodstream infections in adult patients are associated with substantial costs, long LOS, and high mortality rates. Unadjusted comparisons revealed longer inpatient stays and higher costs among patients with early evidence of bloodstream infection with *C. glabrata* relative to *C. albicans*.

INI

IN2

UPPER RESPIRATORY ILLNESS AND EMPLOYEE PRODUCTIVITY—RESULTS FROM THE CHILD AND HOUSEHOLD INFLUENZA-ILLNESS AND EMPLOYEE FUNCTION (CHIEF)

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OBJECTIVE: Evaluate the effect of pediatric and household upper respiratory illness/common cold (URI) on employee function. **METHODS:** The CHIEF Study is a prospective cohort study of 2295 United States employees with children among three large Fortune 500 companies. Prospective monthly survey responses are collected during the 2007–2008 influenza season and linked to an administrative health care claims database. The survey component asks employees about the effect of both personal and household member (HHM) illnesses/injuries and URI on their absenteeism and presenteeism. The administrative claims

database component includes information about health care utilization and expenditures. **RESULTS:** Initial monthly results indicate that employees with URI ($n = 680$) reported more days of absenteeism (0.53 vs. 0.44, respectively; $p = 0.2453$) and more hours of presenteeism (0.88 hours vs. 0.38 hours, respectively; $p < 0.0001$) than employees without URI ($n = 1536$). Employees with at least one HHM experiencing URI reported missing more days of work (0.17 vs. 0.06, respectively; $p = 0.0016$) and more hours of presenteeism (0.43 and 0.14, respectively; $p < 0.0001$) than employees reporting otherwise. Among employees reporting URI, symptoms lasted 4.77 days on average—about half of which were “most severe” (2.31 days). Employees also reported that it took 6.20 days to “get back to normal” following symptom onset. Employees reporting URI and any productivity loss missed 1.36 days of work and experienced 2.79 hours of presenteeism because of their symptoms. Productivity was also negatively affected for employees with at least one HHM experiencing URI—employees reported missing 1.25 days of work and having 0.56 hours of presenteeism as a result of HHM symptoms. **CONCLUSION:** Employees are significantly less productive—in terms of both absenteeism and presenteeism—when they have URI symptoms. Furthermore, employee productivity is also significantly impacted when a HHM reports URI symptoms.

IN3

A MICROSIMULATION OF THE COST-EFFECTIVENESS OF MARAVIROC FOR ANTIRETROVIRAL

TREATMENT-EXPERIENCED HIV-INFECTED INDIVIDUALS

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OBJECTIVE: Maraviroc (MVC) is a CCR5 co-receptor antagonist indicated for combination antiretroviral treatment of adults infected with only CCR5-tropic HIV-1 detectable, who have evidence of viral replication and HIV-1 strains resistant to multiple antiretroviral agents. The cost-effectiveness of a strategy of testing and treating with optimized background therapy (OBT), \pm MVC according to tropism test results, compared to treating with OBT alone, was modeled from a US payers' perspective using 48-week MOTIVATE-1 and -2 trial endpoints. **METHODS:** The MOTIVATE screening cohort (mean age: 45 years, male: 86%, mean baseline CD4: 184 cells/ μ L, mean baseline HIV-1 RNA: 4.72 \log_{10} copies/mL, CCR5-monotropic: 51%, history of opportunistic infections: 67%) was microsimulated using the previously reported ARAMIS model. To achieve convergence, the cohort was sampled 200,000 times with replacement. MVC cost \$29/day, tropism testing cost \$1960, and care costs were taken from HIV Research Network data. Utilities were based on a published US survey. **RESULTS:** In the MOTIVATE trials, 56.1% of patients receiving MVC + OBT and 22.5% receiving OBT alone were virologically suppressed to < 400 copies/mL at 48 weeks. Projecting observed virologic failure rates linearly, ARAMIS predicted life expectancy of 94.5 and 88.9 months for the OBT \pm MVC and OBT strategies, respectively. Mean QALYs and lifetime costs per patient were 5.03 and \$236,900 for OBT \pm MVC and 4.75 and \$220,400 for OBT, for an incremental cost-effectiveness ratio (ICER) of \$60,100 per QALY gained (\$55,000–\$62,600 over 95% CI for MVC + OBT suppression). Varying the proportion of CCR5-monotropic individuals from 30%–80% gave ICERs from \$65,500–\$56,400. For patients with HIV susceptible to ≤ 2 drugs, life expectancy for OBT \pm MVC and OBT alone was 92.5 and 85.5 months respectively, giving an ICER of \$55,400.