ECONOMIC ANALYSIS OF MICAFUNGIN VERSUS CASPOFUNGIN THERAPY FOR THE TREATMENT OF CANDIDIA AND PNEUMONIA INFECTIONS

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OBJECTIVES: The primary objective is to compare candidemia treatment success between micafungin and caspofungin. Secondary objectives are to identify cost and mortality rates associated with the use of micafungin versus caspofungin. METHODS: This is an economic analysis of patients who received either micafungin or caspofungin during their hospitalization in a regional VA medical center between January 1, 2004 and February 29, 2008. A combination of electronic data extraction and manual chart review was performed on each subject’s medical record for patient characteristics and outcomes. RESULTS: Compared to caspofungin, micafungin significantly reduced the mean length of stay by 3.72 days (p = 0.016), post antifungal use (p = 0.021) and post antifungal use (p = 0.002). Treatment success was comparable among groups (74% micafungin compared to 66% caspofungin, p = 0.297). Microbiological success was 54% vs. 45% (p = 0.367) for micafungin vs. caspofungin, respectively. There was no difference in microbiological success between C. albicans and C. non-albicans for micafungin (p = 0.802), however, a significant difference was seen in the caspofungin patients (C. albicans 33% vs. 59% C. non-albicans, p = 0.05). Total cost of patient care (p = 0.027) and echinocandin overall cost (p = 0.001) were significantly lower in the micafungin group. Length of stay and mortality rates were comparable among groups. CONCLUSIONS: Our final overall treatment success was non-inferior among micafungin and caspofungin therapies.

US HEPATITIS C BURDEN ASSESSMENT FROM A TRANSMISSION MODEL

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OBJECTIVES: Achieving sustained virologic response (SVR) could prevent further transmission, risk factors, and cost associated with C virus (HCV) and related chronic hepatitis C (CHC) incidence; we developed a compartment model to describe the dynamics of HCV transmission in the United States. METHODS: This population model was expressed by partial differential equations across compartments based on: injection-drug use, CHC infection, diagnosis, genotypes, treatment/relapse, death and disease progression. Model inputs were based on published sources. Model was calibrated from 2002–2006 and matched closely with CDC reports and other published literature. The calibrated model was then applied to assess the CHC burdens from 2007–2040 under the current pegylated-interferon/ribavirin (P/IR) treatment strategy. A scenario of a hypothetical new HCV regimen (NEW) was also assessed. This included: NEW available in 2011 (70% SVR) for genotype-1, treatment-naive patients; P/IR treatment failure patients (TFs) re-treated with NEW with 50% SVR; NEW not used to treat genotype-2/3 patients; P/IR durations consistent with current treatment guidelines by genotypes and costs $28,000/48-week; diagnosis and treatment rates remain unchanged with NEW. All costs were converted into 2007 dollars using 3% discount rate. RESULTS: Under P/IR, US CHC prevalence at 2040 is projected to be around 1.7 million. Overall CHC direct medical cost is about $6 billion a year under P/IR, only 13% of which is treatment-related; the remaining 87% comes from managing the comorbidities and long-term consequences of advanced liver disease (ALD) among undiagnosed patients, diagnosed-but-never-treated patients, and TFs. Compared to P/IR, NEW is projected to cure 351,448 more patients, prevent 23,448 more CHC incidence, reduce 233 more ALD incidence, and prevent 39,929 more deaths from 2007–2040. CHC prevalence at 2040 under NEW is projected to be 335,000 fewer patients. CONCLUSIONS: A new CHC regimen may have a higher public health impact than P/IR. Costs unrelated to current CHC treatment with P/IR are the major burden of hepatitis C.