Subjects were divided into exposure and control groups. The exposure group included patients treated with interferon-α from January 1, 2002 to December 31, 2010 using Chi-Mei Medical Center claim data. Patients treated with interferon-α may cause side effects of depression. Recent study has reported that serum serotonin levels are associated with antidepressant treatment. The endpoints were evaluated liver-related lab data, antiviral therapy outcomes in patients with chronic hepatitis C. The aim of this study was to evaluate the cost and effectiveness of antidepressants in hepatitis C patients treated with interferon-α. METHODS: This is a retrospective study from January 1, 2002 to December 31, 2010 using Chi-Mei Medical Center claim data. Subjects were divided into exposure and control groups. The exposure group included patients treated with IFN-α or combined antiviral drugs and antidepressants for at least 6 months. The control group was those without antiviral or antidepressant treatment. The endpoints were liver-related lab data, the number of visits to the out-patient department, emergency department or admission during treatment, and the cost. RESULTS: There were a total of 135 patient diagnosed hepatitis B or C and treated with IFN-α or combined antiviral drugs. Comparing the exposure and control groups, the control group had a higher SGOT (53.97±40.0 vs. 31.6±16.4 µmol/L, 95% CI: 28.12–50.3, P=0.05), SGPT (62.0±7.5 vs. 31.6±12.3 µmol/L, 95% CI: 27.95–122.64, P=0.05), AFP (9±22.4 ng/mL vs. 11.7±18.1 ng/mL, 95% CI: 1.77–5.7, P=0.304). Composite health care costs in six months is NT$ 263,200 for exposure group and NT$242,600 for control group. No significant difference. That may be related to psychiatric visits and medication use. CONCLUSIONS: These results suggest that antidepressants may play an important role in hepatitis B or C patients treated with IFN-α or combined antiviral drugs. Future studies are needed to further clarify the mechanisms of antidepressant action.

The cost-effectiveness analysis of the available pneumococcal conjugated vaccines for children in Colombia

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OBJECTIVES: Streptococcus pneumoniae is an important gram-positive pathogen with more than 90 serotypes, responsible for invasive pneumococcal diseases (IPD) (meningitis, bacteremia) and noninvasive diseases (pneumonia, otitis acute middle ear [OAM]). This analysis is aimed to estimate the cost-effectiveness of pneumococcal conjugate vaccines PCV13 and PCV10 in terms of prevention of disease and deaths by IPD, radiologically confirmed pneumonia, AOM, and life years gained (LYG) in a cohort of newborns in Colombia. METHODS: A decision tree model was developed with national data including the distribution of pneumococcal serotypes in Colombia between 2009 and 2011. Comparators were: PCV13, PCV10, (scheme 2) B against no vaccination, vaccine coverage of 90% was assumed (699,975 children). The simulation of newborns in Colombia took place within a time horizon of 5 years and a discount rate of 3%. The analysis used an economic perspective, and the future costs were performed. RESULTS: After 5 years of follow-up, PCV13 would prevent 426 deaths due to pneumococcal infections versus 331 that would be prevented by PCV10, compared to no vaccination. PCV13 and PCV10 would generate 25,212 LYG and 19,792 LYG respectively. Comparing PCV13 and PCV10 would be US$1,950,837 and US$15,094,775, respectively. Compared to no vaccination, PCV13 and PCV10 were cost-effective, with cost-effectiveness ratio of US$570.35 and US$768.57 per LYG; although, PCV13 was dominant over PCV10 due to lower total costs and better health outcomes. CONCLUSIONS: PCV13 is a cost-saving strategy compared with PCV10, as part of a mass vaccination program in Colombian children under one year. PCV13 is expected to lead to a greater decrement in infant mortality from pneumococcal diseases.

COST-EFFECTIVENESS ANALYSIS OF PNEUMOCOCCAL VACCINES FOR ADULTS IN THE UNITED STATES

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OBJECTIVES: In 2012, the U.S. Advisory Committee on Immunization Practices (ACIP) revised their 1997 adult pneumococcal vaccination recommendations to include a sequential regimen of 13-valent pneumococcal conjugate vaccine (PCV13) followed by 23-valent polysaccharide vaccine (PPSV23) for certain high-risk adults with immunocompromising conditions, while continuing routine PPSV23 use for healthy and immunocompetent adults with comorbidities. This study aimed to estimate 1) cost-effectiveness of the 2012 ACIP recommendations relative to 1997 recommendations, 2) cost-effectiveness of potential future pneumococcal vaccination policies, and 3) key assumptions that influence study results. METHODS: A static cohort model that incorporated cost and attributable life-years lost associated with invasive pneumococcal disease and non-bacteremic pneumococcal pneumonia (NBPP) was developed to evaluate the cost-effectiveness of seven pneumococcal vaccination strategies for an adult cohort 50 years of age using incremental cost-effectiveness ratios (ICERs). RESULTS: For aim 1, the 2012 ACIP recommendation was found to be the most economically efficient strategy (ICER of $14,781 per QALY gained). For aim 2, when the set of strategies evaluated was extended to consider potential future policies, the most economically efficient strategy was modifying the 2012 recommendation for adults with immunocompromising conditions to include a sequential regimen of PCV13 and PPSV23 followed by PCV13 for all adults (ICER of $13,775 per QALY gained). For aim 3, cost-effectiveness ratios for alternative vaccination strategies were highly influenced by assumptions about vaccine effectiveness in NBPP and accounting for herd protection effects of pediatric pneumococcal vaccination on adult pneumococcal disease. CONCLUSIONS: Extending the 2012 ACIP recommendations to include a sequential regimen of PCV13 and PPSV23 at age 65 for adults with immunocompromising conditions appears to be a cost-effective vaccination policy. Given the uncertainty in available data and absence of key input data related to vaccine effectiveness and herd protection, policy-makers should conduct comprehensive sensitivity analyses when evaluating new pneumococcal vaccination strategies in adults.