A COST-EFFECTIVENESS ANALYSIS OF A YEARLY FIBROSCAN® LIVER FIBROSIS ASSESSMENT COMPARED WITH A PERIODIC LIVER BIOPSY IN HEPATITIS C VIRUS (HCV) INFECTED INDIVIDUALS IN A FRENCH SETTING
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OBJECTIVES: FIBROSCAN® is an ultrasound elastography based non-invasive liver fibrosis assessment device. This new technology is aimed to replace or diminish the number of invasive liver biopsy performed. The purpose of this study was to compare, in terms of life expectancy and lifetime costs, a 5-year periodic liver biopsy follow-up of HCV infected patients to an annual liver fibrosis assessment using FIBROSCAN® which is assumed to allow an earlier antiviral treatment initiation.

METHODS: A discrete event simulation was developed. The model simulates the lifetime follow-up of a cohort of 10,000 HCV newly infected individuals. The Health Insurance perspective was used and costs were discounted using a 3% rate. Direct medical costs were derived from French official sources. The model was populated with published clinical trial data and other published studies. RESULTS: Death rate from hepatic mortality was reduced by 0.68% (68 deaths prevented over the whole cohort) with FIBROSCAN®. The survival gain was 0.07 year/patient that is 10.3 years for the 68 avoided deaths. The average cost of the disease was of €11,545/patient with FIBROSCAN® compared with €12,510/patient in the case of biopsy. When biopsy was performed every 3 years, there were no survival gain but savings of 3,722€/patient. At every 10 years, FIBROSCAN® follow-up remained a cost-effective strategy allowing a 3.53% reduction of hepatic death (353 deaths prevented over the whole cohort) and a survival gain of 0.39 year/patient (p < 0.001). In this latter case, the cost per life year gained was 810€. Direct medical costs, discount rate, response rate to treatment and early transmission of pertussis in the household setting.

RESULTS: Relatively, the potential most effective strategy would be to cocooning. However this would also be the most expensive. Compared to do-nothing, incremental cost-effectiveness of the three strategies varied from €15,000 to just over €100,000 per hospitalization averted in the base case. Results appeared to be robust in sensitivity analysis. Under plausible assumptions, pre-pregnancy maternal immunization could well be the most cost-effective strategy. We note that the overall impact on total numbers of infections among young infants obviously crucially depends on the vaccination coverage achieved. CONCLUSION: Cost-effectiveness analysis as presented here is crucial in the Dutch decision making concerning additional pertussis vaccination strategies to protect young infants against severe disease. Further research is needed to fully assess the effectiveness of these strategies, inclusive the application of dynamical models for the spread of pertussis.

COST-EFFECTIVENESS OF PEGINTERFERON-ALFA-2A (40 KD) ASSOCIATED WITH RIBAVIRIN IN THE TREATMENT OF PATIENTS WITH CHRONIC HEPATITIS C, GENOTYPES 2 AND 3 IN BRAZIL
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OBJECTIVES: Hepatitis C is a disease affecting approximately 180 million people worldwide (WHO 2006) and is one of the main causes of chronic hepatic disease. HCV infection progresses to chronic form in 80% of infected individuals. Approximately 20% progress to cirrhosis over 20 years and, consequently, a high risk of developing hepatocellular carcinoma population. Our objective is to assess the incremental cost-effectiveness ratio (ICER) of peginterferon-alfa-2a (40 KD) plus ribavirin (PEG + RBV) versus interferon-alfa-2b plus ribavirin (IFN + RBV) in the treatment of patients with chronic hepatitis C, genotypes 2 and 3 in the Brazilian payer perspective. METHODS: A Markov model was built to estimate the clinical and economic impact related to the incorporation of peginterferon-alfa-2a (40 KD). Clinical stages were based on liver histology, forms of cirrhotic decompensation, liver cancer and liver transplantation. A Delphi panel was performed for evaluating the direct medical resources related to each clinical stage in chronic hepatitis C, as well as costs from treatment with peginterferon-alfa-2a (40 KD), interferon alfa-2b and ribavirin. Effectiveness of treatment with peginterferon-alfa-2a (40 KD) was obtained from a multicenter, controlled, randomized trial involving 1,121 naïve patients with chronic hepatitis C (Fried, M. W. et al, 2002). We have assumed a discount rate of 3.5% for costs and outcomes according to NICE and a lifetime horizon. A sensitivity analysis was conducted using second-order Monte Carlo simulation. Tested parameters were costs per stage, treatment costs, discount rate, response rate to treatment and early patient distribution. RESULTS: The ICER of PEG + RBV versus IFN + RBV was approximately R$18,627 per life year gained (LYG). The 95% confidence interval for the ICER ranged from R$9,571 to R$29,090. CONCLUSION: The study suggests...