ECONOMIC BURDEN OF CONTRAST-INDUCED NEPHROPATHY (CIN): IMPLICATIONS FOR PREVENTION STRATEGIES

Subramanian S1, Bapat B2, Zyczynski T2, Tumlin J1
1RTI International, Waltham, MA, USA; 2RTI International, Research Triangle Park, NC, USA, 3GE Healthcare, Princeton, NJ, USA, 4University of NC and Southeast Renal Associates, Charlotte, NC, USA

OBJECTIVE: There is increasing evidence that CIN has a significant impact on patient morbidity and mortality. Currently, there is no systematic assessment of the cost of CIN and the objective of this study is to estimate the in-hospital and one-year direct health care cost related to CIN. METHODS: We performed a thorough literature search using several databases including MEDLINE® and the Cochrane Library to estimate the incidence of CIN and understand the types of short-term and long-term sequelae of CIN. We only retained studies that met our inclusion criteria which included studies published after 1990 with a sample size of at least 100 patients that compared outcomes of patient with and without CIN. Based on this review we developed a decision analytic model to estimate the in-hospital and one-year cost of CIN. One-way and two-way sensitivity analyses were performed. RESULTS: We identified 14 studies that met our inclusion criteria. The overall rate of CIN was 10.0% (95% CI 6.6 to 13.4). Patients with CIN stayed longer in the hospital (additional 3.65 days: 95% CI 1.6 to 5.7) and were more likely to experience major adverse events both in-hospital and during one-year follow-up. The average per patient one-year cost due to CIN is $11,303 (range of $6132 to $13,847 in sensitivity analysis). About 4 million cardiac catheterizations are performed in the US and Europe and over $4.5 billion dollars, about $1000 per cardiac catheterization, could be spent treating the sequelae of CIN. CONCLUSIONS: CIN results in significant health care costs and the expansion in the use of contrast media and increase in the prevalence of risk factors for CIN, significant health care costs and the expansion in the use of contrast media and increase in the prevalence of risk factors for CIN, and by treating the sequelae of CIN.

CARDIOVASCULAR EVENTS REDUCTION AND COST-EFFECTIVENESS OF ATORVASTATIN VERSUS PRAVASTATIN IN SPANISH POPULATION WITH ACUTE CORONARY SYNDROME (ACS)

F Bobadilla J1, Checa JC1, Soto J1, Garcia M2, Martinez E1, Hernandez I1
1Pfizer Spain, Alcobendas, Madrid, Spain, 2Euroclin Institute, Alcobendas, Madrid, Spain

OBJECTIVES: Clinical trials results expressed as relative risk reduction may be misleading. It looks appropriate to assess the poblational benefit by modelling the benefit demonstrated in the trial. The objectives are: a) to estimate the number of events avoided by Atorvastatin 80 mg (A80) vs. Pravastatin 40 mg (P40) in ACS patients hospitalized in Spain, according to PROVE-IT results, and b) to determine the incremental cost-effectiveness ratio (ICER) of both alternatives. METHODS: a) The poblational impact of treating all ACS Spanish patients with A80 vs. P40 was estimated. Effectiveness data were obtained from the PROVE-IT, the first trial comparing two statins in ACS. In this study, A80 was associated with a 3.9% absolute reduction in the primary endpoint, a composite of all cause mortality, AMI, unstable angina, revascularization and stroke (22.4% A80 vs. 26.3% P40; p = 0.005). Estimated annual incidence of ACS in Spain was 76,604; and b) A cost-effectiveness analysis model based in a decision tree projected to 2 years was performed under the National Health System (NHS) perspective. Only direct costs were considered (€2005). Effectiveness was measured as primary events avoided. RESULTS: If all ACS patients hospitalized in Spain were treated with A80 for 2 years, in comparison with what would happened when treated with P40, 2986 events (including 792 deaths) would be avoided annually since the second year of treatment. ICER of A80 vs. P40 was €543/event avoided, meaning that, according to the model, NHS would be saving €543 for every event avoided by A80. These results were robust to the sensitivity analysis, fluctuating between a neutral result and a benefit for A80. CONCLUSIONS: In the reference analysis, 2986 events would be avoided annually, including 792 deaths, by treating the entire Spanish ACS population with Atorvastatin 80 mg vs. Pravastatin 40 mg, with an average saving of €1,621,400 for the NHS.

COST-EFFECTIVENESS OF CLOPIDOGRUEL IN MEXICO: WITHIN TRIAL ANALYSIS

Jeries-Sanchez CI, Trujillo A2, Ramos MA1, Hernandez I1, Alvarado R3, Cruz A1, Rangel FJ1, Morales E2
1Hospital de Enfermedades Cardiovasculares y Torax-IMSS, Monterrey, Nuevo Leon, Mexico; 2Hospital General de Zona 57, Tlalnepantla, Mexico, Mexico, 3UMAE CM La Raza, Mexico City, Mexico City, Mexico, 4Hospital Juarez de Mexico, Mexico City, Mexico, Mexico, 5ISSSTE Durango, Durango, Durango, Mexico, 6Hospital PEMEX-Norte, Mexico City; Mexico City, Mexico, 7Cardiometabolic Research Unit, Aguascalientes, Aguascalientes, Mexico

OBJECTIVES: In the CURE trial, clopidogrel on top of aspirin has been shown to reduce the number of cardiovascular events (CV) defined as myocardial death, myocardial infarction and stroke, compared to aspirin alone by 20% in patients with unstable angina or non-ST-elevated myocardial infarction with an acceptable 1% increase of major bleedings. Since acquisition costs of clopidogrel is greater than aspirin, it is important to evaluate the cost-effectiveness of this strategy in Mexico. METHODS: Costs were elicited from the IMSS mainly. (Social Security System, 2005). A group of experts identified the resource used by patients during a CV event. Study drug and concomitant medications costs were calculated based on the treatment duration reported in CURE, and costs of adverse events were included. Effectiveness was measured as the total number of events avoided. Sensitivity analyses were performed on the mean costs of events and complications. RESULTS: The mean cost per patient was US$10,614 for the clopidogrel arm and $10,492 for aspirin. The incremental cost was higher due to drug acquisition costs. Treatment with the clopidogrel strategy reduced the number of events by 0.020 (0.1315 vs. 0.1114); resulting in an incremental cost-effectiveness ratio (ICER) of $6070/event avoided. In the sub-analysis of patients who underwent PCI (PCI-CURE), the total cost reached $10,910 and $10,721 for the clopidogrel and the aspirin strategy, respectively while the number of events were 0.1165 with the clopidogrel strategy and 0.1517 in the aspirin alone arm; resulting in an ICER of $5369/event avoided. The sensitivity analysis highlighted that the maximum ICER in the CURE analysis was $15,526, using the lowest cost/event reported and $9905/event avoided in PCI-CURE sub-analysis. CONCLUSION: When comparing the ICER with the acceptability threshold recommended by WHO (i.e., ICER < 3xGDP per capita ($30,177), clopidogrel on top of aspirin is highly cost-effective in UA/NSTEMI patients within IMSS Mexico.