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Article
Exploratory cost-effectiveness analysis of cardiac resynchronization therapy with systematic device optimization vs. standard (non-systematic) optimization: A multinational economic evaluation

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Expressed as cost per Quality Adjusted Life Years (QALY) gained. To assess the impact of data uncertainty, a sensitivity analysis was performed. The model also predicts outcomes for the two optimization strategies for CRT-D therapy vs. optimal medical treatment (OPT).

Results: At 1 year, ICERs for SO CRT vs. NSO CRT-P range between € 22,226 (Spain) and € 26,977 (Italy). Therefore, on the basis of a Willingness-To-Pay of €30,000 per QALY, the SO method develops into a cost effective strategy from 1 year, onwards. These favorable outcomes are supported by the sensitivity analysis. Systematic optimization of CRT-D might also improve the cost-effectiveness of this device therapy by 27 % to 30 % dependent on the country analyzed, at 5 years.

Conclusions: Our economic evaluation shows promising health economic benefits associated with SO CRT. These preliminary findings need further confirmation.

Keywords: Cardiac resynchronization therapy (CRT); Cost effectiveness; Optimization of CRT therapy

Background

Heart failure (HF) is a growing worldwide public health issue and constitutes enormous medical, social and economic problems. In Europe, 1-2 % of the general population is affected by HF with a rapid increase in prevalence for the older age groups [1, 2]. Around 3.5 million people are newly diagnosed with HF every year [3]. Morbidity and mortality caused by this chronic and progressive disease is

substantial with observed death rates after one year of diagnosis as high as 40 % without adequate therapy [4–6]. **Due to its significant frequency coupled with the high morbidity and mortality, medical resource utilization devoted to the care of patients with HF is considerable, resulting in a high financial burden to healthcare payers.** For numerous developed countries the management of HF has been shown to account for at least 1-2 % of total health care expenditures [7].

For the treatment of patients with advanced HF and evidence of intraventricular conduction delay who are

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