MODELING THE FISCAL IMPACT OF USING PERFLUTREN LIPID MICROSPHERES (PLM) FOR FOLLOW-UP ECHOCARDIOGRAPHIC IMAGING
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OBJECTIVES: Approximately 20% of echocardiographic imaging studies are suboptimal (inadequate visualization of endocardial borders). Use of contrast agents reduces suboptimal imaging and decreases frequency of follow-up testing. Given that the financial impact of increased use of contrast echocardiography has not been fully explored, the objective of this study was to evaluate the economics of introducing the contrast agent, perflutren lipid microspheres (“PLM”), to an echocardiography testing paradigm. METHODS: We developed an economic model of echocardiographic imaging with PLM versus no contrast agent in hospital outpatients. The model assumes a 100,000-member health plan, with 4,000 members requiring initial non-contrast echocardiography annually, of which 20% are suboptimal and require follow-up testing. The first round of follow-up testing is assumed to be non-stress transthoracic echocardiography with or without PLM. Up to one subsequent round of follow-up testing was modeled, reflecting the range of current clinical practice (i.e., repeat echocardiography, cardiac catheterization/coronary angiography, nuclear imaging, cardiac MRI or CT). Default values for procedure costs were estimated from 2008 CMS payment rates; other clinical and cost data were derived from clinical trial reports, published literature, and an expert panel survey. Sensitivity analysis was performed to assess the robustness of model findings to variation in key model parameters. RESULTS: Use of PLM versus no contrast agent was associated with approximately 81% (120 vs. 640) fewer follow-up tests. Associated annual cost savings were approximately $114,000, or $143 on a per-patient basis. Per-member-per-month (PMPM) costs of initial and subsequent follow-up testing in the 100,000-member plan were estimated at $0.52 with PLM versus $0.61 when no contrast agent was used. CONCLUSIONS: Because of its relatively low cost and potential to obviate the need for more expensive and more invasive examinations, perflutren lipid microspheres may be an asset in providing cost-effective cardiology diagnoses in financially-conscious environments.

ESTIMATING THE BUDGET IMPACT OF DABIGATRAN ETEXILATE IN THE PRIMARY PREVENTION OF VENOUS THROMBOEMBOLISM FOLLOWING TOTAL HIP OR KNEE REPLACEMENT SURGERY: AN INTERACTIVE MODEL FOR LOCAL HEALTH ECONOMIES IN THE UK
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Patients undergoing total hip replacement (THR) or total knee replacement (TKR) surgery are considered to be at high risk of venous thromboembolism (VTE). The current gold standard of care in prevention of VTE (thromboprophylaxis) in these patients is low-molecular-weight heparin (LMWH), which is delivered by subcutaneous injection. Dabigatran etexilate (DBG) is a novel, direct thrombin inhibitor which is administered orally and does not require any monitoring. OBJECTIVES: To evaluate the budgetary impact of DBG in local health economies. METHODS: Phase-III trials demonstrated that DBG is as effective and safe as enoxaparin (LMWH). Therefore this study concentrated on thromboprophylaxis costs most likely to change dependant on the choice of thromboprophylactic, namely, medication acquisition and administration. An interactive model was developed, whereby the user can select a local health economy (e.g. acute trust, NHS/independent centre, primary care organisation etc.) anywhere in the UK and assess the budgetary impact of the introduction of DBG based on local THR/TKR procedure data. Several other inputs may also be defined, including current practice, take-up, ability to self-administer, treatment duration and strategy. Unit costs were derived from standard sources; other inputs were derived from the published literature. RESULTS: Under default assumptions, results for a large hypothetical centre performing 500 THR and 500 TKR procedures per year reveal that although the medication acquisition costs of DBG and LMWH are similar, the introduction of DBG could potentially save up to 1500 community nurse visits per annum. This translates into a budget savings of approximately £44,000. CONCLUSIONS: Compared with LMWH, centres that switch patients to DBG may decrease the financial burden placed on the local health economy by current recommended practice in thromboprophylaxis following THR and TKR. Through removal of costly administration, education and home visits associated with LMWH, the resource savings could be considerable.