

PP99 Positron Emission Tomography Combined With Computed Tomography (PET/CT) Using 11-C Methionine (11C-MET)

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Introduction: Positron emission tomography combined with computed tomography (PET/CT) using 11C-methionine (11C-MET) is used to detect astrocytomas and low-grade brain tumors, in the primary detection of all malignant and benign neoplasms of the central nervous system (CNS), and in order to monitor staging and evaluate the results of treatment.

Methods: To assess the clinical and economic effectiveness of PET/CT with the use of radiopharmaceutical drugs (RFLP) based on 11C-MET in the diagnosis of CNS neoplasms, a systematic review of literature by keywords in the Pubmed/MEDLINE database was conducted. The search result was 218 publications. The analysis included 21 publications that met the search criteria, including three meta-analyses and six systematic literature reviews.

Results: Diagnostic efficacy in distinguishing gliomas of high and low malignancy has moderate diagnostic accuracy (combined sensitivity and specificity were 80% and 72%, respectively), but higher sensitivity compared to Fludeoxyglucose F18 (18F-FDG). PET/CT with 11C-MET demonstrated good diagnostic value in detecting brain tumor recurrence (combined sensitivity and specificity of 92% and 87%, respectively) compared with 18F-FDG.

Conclusions: PET/CT diagnostics of CNS neoplasms using the drug 11C-MET is an innovative technology with greater specificity and sensitivity than 18F-FDG, positively influences the subsequent surgery plan and identifies tumors previously undetermined by magnetic resonance imaging (MRI), CT or PET/CT with 18F-FDG.

PP101 Clinical And Economic Impact Of Flushing Vascular Access Devices With Pre-filled versus Manually-Prepared Saline Flush Syringes In Korea

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Introduction: Around 90 percent of hospitalized patients require vascular access devices (VADs) during hospitalization to administer fluids, medications and facilitate blood transfusions. After insertion, it is essential to maintain VADs to achieve optimal dwell time and reduce complications. Flushing of VADs is an integral part of catheter maintenance practices. With increasing cost burden on healthcare systems and nursing shortages, it is crucial to use time-and cost-saving technologies such as pre-filled flush syringes for common procedures namely VAD maintenance. This study aims to compare the clinical and economic impact of using pre-filled saline syringes versus manually-prepared saline syringes for flushing VADs in Korea.

Methods: A budget impact analysis was developed using Microsoft Excel to estimate the annual clinical and economic impact of pre-filled saline syringes and a base case scenario of flushing 100,000 VADs was modeled. Clinical impact was estimated for peripheral intravenous catheter (PIVC) failure, central line-associated bloodstream infections (CLABSIs), central line occlusion and nurse time. Economic impact was estimated for costs associated with flushing materials, additional length of stay (LOS) due to CLABSI, VAD replacement, and nurse-time. Global and local data sources were used for inputs. Assumptions include: (i) Distribution of 95 percent peripheral and 5 percent central VADs; (ii) 50 percent peripheral and 50 percent central VADs on intermittent therapy; and (iii) 3 flushes/catheter-day.

Results: Over a one-year timeframe, the model estimated 3,344 fewer PIVC failures, 15 fewer CLABSIs and 157 fewer occlusions with adoption of pre-filled saline syringes. Nurse time was reduced by 3,465 hours. Potential net annual savings from lower device cost, reduced complications, shortened LOS and increased nurse efficiency were estimated to be KRW23.7 million (USD178,957).

Conclusions: Using pre-filled saline syringes instead of manually-prepared syringes for flushing VADs may result in fewer complications, lower VAD utilization, nurse time saving and cost savings in Korea. This can potentially help improve patient outcomes, relieve nurses' stress to some extent and help healthcare decision-makers to reallocate these cost savings to other life-saving technologies.

PP102 Impact Of Placing Peripherally Inserted Central Catheters At Patient Bedside Versus Radiology Suite In A Private Australian Hospital

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Introduction: A peripherally inserted central catheter (PICC) is an important vascular access device to administer certain intravenous (IV) therapies, which is traditionally placed using fluoroscopy in radiology suites. With advancing tip-confirmation technology, PICCs can be placed at the patient bedside by nurses, without any delays arising from wait time for the radiology suite or the need of

transferring patients to the radiology suite, leading to time savings and allowing prompt start to IV therapy. This study aims to estimate the cost and time impact of placing PICCs at the bedside using tip-confirmation technology led by nurses versus in the radiology suite using fluoroscopy by radiologists.

Methods: A budget impact analysis was developed using Microsoft Excel to estimate the annual impact of inserting PICCs at the bedside versus in the radiology suite. The base case scenario was modelled for 1,000 PICCs placed in a private Australian hospital. Impact on bed days, labor time and overall cost was estimated by using global and local data sources for inputs. It was assumed that 100 percent PICC are placed in a radiology suite in current practice, while 95 percent are placed at the bedside and 5 percent in the radiology suite in future practice.

Results: By shifting PICC insertion to the bedside using tip-confirmation technology, the model estimated a reduction of labor time by 221 hours and bed days by 113 days. Despite an increase in the cost of consumables by AUD34,041 (USD22,760) and reduction of Medicare Benefits Schedule rebate by AUD260,730 (USD174,328), overall cost savings of AUD1.01million (USD675,660) was observed due to significant savings due to the reduced utilization of the radiology suite.

Conclusions: PICC insertion at the patient bedside using tip-confirmation technology by nurses may lead to time and cost savings as compared to placing them in the radiology suite. This can help alleviate the burden on radiology suites and reduce their wait times, potentially leading to timely treatment initiation and discharge. Since PICCs at the bedside are typically placed by specialized vascular access nurses, these cost savings can be redirected to employ and train them.

PP103 Budget Impact Analysis Of Utilization Of WavelinQ Endo-arteriovenous Fistula System For Hemodialysis Patients: An Australian Hospital Perspective

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Introduction: A high proportion of patients with end-stage kidney disease (ESKD) are treated with hemodialysis (HD). To lower morbidity and maintain overall cost control in patients with ESKD, it is crucial for health systems to establish and maintain durable hemodialysis (HD) access. Our objective was to assess the budget impact of utilizing the 'WavelinQ Endo Arteriovenous Fistula (AVF) system' (WavelinQ) for HD patients.

Methods: A one-year economic model from the Hospital (Flinders Medical Centre, FMC) perspective was developed with Australian epidemiological and costing data. Clinical data were collected from real-world sources. The incident (n=50) and prevalent (n=250) cohorts were based on FMC utilization patterns. The current standard of care was surgical AVF (sAVF) and/or central venous catheters

(CVC). With introduction of WavelinQ into practice, the substitution rate was set at 50 percent in new patients and ten percent amongst existing patients. Index procedure and reinterventions costs for the patient were based on the weighted average cost using National Efficient Price Determination 2020 to 21. Total costs pre-WavelinQ introduction were compared to post WavelinQ substitution to determine the budget impact.

Results: Based on FMC expected patient cohort and WavelinQ substitution rates, the mean annual cost savings per incident and prevalent patient were AUD26,873 and AUD3,549, respectively, which lead to overall mean annual cost savings per patient of AUD7,437. The calculated per patient additional upfront cost of AUD7,010 with the WavelinQ index procedure versus sAVF was more than offset by the savings due to less post-procedure reinterventions. Overall, at the assumed substitution rates with WavelinQ, the model predicted a cost saving of approximately AUD2.2 million dollars for FMC.

Conclusions: The use of WavelinQ is expected to lead to cost savings of AUD2.2 million dollars from the FMC perspective. Hospitals should consider not just the increase in upfront costs but also potential savings from less reintervention procedures. There is a need for continued research on the budget impact of different HD modalities across multiple settings.

PP104 Impact Of New Pembrolizumab Indications After Initial Registration By Brazilian Health Regulatory Agency (ANVISA)

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Introduction: Most new drugs have only clinical studies focused on a single population at the time of first registration, hence their indications for use are restricted to this population. For clinical conditions when there are no other treatments available, new drugs have higher costs in Brazil. There is no review of prices when these medications broaden their therapeutic areas, and this can have a significant financial impact. This study's objective is to assess the financial implications of pembrolizumab's incremental indication after its initial registration.

Methods: We calculated the annual cost to treat all Brazilian patients with indications for use in the first registration and all incremental indications of pembrolizumab. Populations were estimated by epidemiological data from the pembrolizumab clinical trials called, KEYNOTE studies, and the INCA 2023 cancer estimate for the Brazilian population. Costs were calculated by CMED-ANVISA price value and considering the dosing of 200mg every 3 weeks.