

databases: Medline, Embase, the Cochrane Library, and the [Centre for Reviews and Dissemination](#). Systematic reviews, randomized and non-randomized controlled trials, and case series studies evaluating the efficacy and safety of RFA in patients with vertebral metastases were included.

Results. Sixteen studies were included: two systematic reviews, 13 case series studies, and one comparative study. None of the systematic reviews identified any randomized controlled trials. Of the 14 included primary studies, 10 evaluated RFA in combination with vertebroplasty, three evaluated RFA in combination with kyphoplasty, and one study evaluated a combination of RFA and radiation therapy. In all cases, the evaluated patients had different types of cancer (e.g., breast, lung, or liver). The follow-up periods varied between the studies from one day to 12 months. The most commonly used RFA devices were the STAR™ Tumour Ablation System (Merit Medical Systems) and the OsteoCool™ Radiofrequency Ablation System (Medtronic).

Conclusions. RFA reduces pain, improves functional capacity, and provides greater local control of disease, potentially giving patients a higher quality of life, even in the context of metastatic disease. Although there is evidence on the safety and efficacy of this technology for the palliative treatment of vertebral metastases, more studies with higher methodological quality are needed. There were no studies available on the cost effectiveness of RFA for this indication.

PP133 Developing A Novel Multifaceted Graphical Visualization For Treatment Ranking Within An Interactive Network Meta-Analysis Application

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Introduction. Network meta-analysis (NMA) is a key methodology for comparing the effectiveness of multiple interventions or treatments simultaneously. This project aimed to ascertain current methods and visualizations for treatment ranking within an NMA framework and to subsequently develop a novel graphic within MetaInsight (an interactive NMA web application), to aid clinicians and stakeholders when making decisions regarding the “best” intervention(s) for their patient(s).

Methods. Current literature on the methodology or visualization of treatment ranking published in the last 10 years was collated and studied. Based on the literature, a novel graphical visualization was developed using RShiny (RStudio, PBC) and integrated within MetaInsight, which is currently hosted on shinyapps.io.

Results. Bayesian analyses produce rank probabilities from which mean or median rank and surface under the cumulative ranking curve can be calculated. For frequentist analyses the p-value is available. The simpler methods may be easier to interpret, but they are often more unstable and do not encompass the whole analysis (and vice versa). To aid interpretation and facilitate sensitivity analysis, an interactive graphic was developed that presents rankings alongside treatment effect and study quality results.

Conclusions. Treatment ranking is useful, but the results should be interpreted cautiously, and the visualization should be

transparent and all-encompassing. A ‘living’ version of MetaInsight, with treatment ranking, would allow interested parties to follow the evidence base as it grows.

PP140 Barriers And Prospects For The Development Of Hospital-Based Health Technology Assessment In Kazakhstan

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Introduction. The experience of implementing a hospital-based health technology assessment (HB-HTA) system in Kazakhstan is currently represented by only one organization, an independent HB-HTA unit established in 2015 in the Medical Center Hospital of the President’s Affairs Administration (the Hospital). Despite the demonstrated positive experience of the Hospital, the widespread implementation of the HB-HTA system in Kazakhstan has experienced some barriers that must be considered before further development can occur.

Methods. To determine the barriers to developing and implementing HB-HTA in Kazakhstani hospitals, data from the Hospital’s experience were obtained through a survey of Kazakhstan hospitals, conducted on behalf of the Ministry of Health Care. An official response was received from 29 hospitals. During the survey and discussions with hospital staff using the “brainstorming” method, several barriers to the development of HB-HTA in Kazakhstan were identified.

Results. Barriers at the system level included the lack of monitoring of the HB-HTA system at the national and regional levels and a lack of methodological support. Organizational barriers included a critically small number of HTA experts and the need for additional logistical support and funding from hospitals. The subjective factors we attributed to the rejection of the HB-HTA system by hospital management were the underestimation of lost profits and that HTA is a tool for promoting a transparent and open system for making managerial decisions.

Conclusions. Despite some barriers, the development of HB-HTA in Kazakhstan is a promising area. The heads of key hospitals in Kazakhstan demonstrated a readiness and understanding of the need to use the principles of health technology assessment and clinical and economic analysis to promote the active transfer and implementation of innovative medical technologies.

PP145 VALIDATE Methodology For A Medication-Related Clinical Decision Support System: Innovating Or Going Back To Basics?

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Introduction. In the past decade, health technology assessment (HTA) has narrowed its scope to the analysis of mainly clinical and economic benefits. However, twenty-first century technology challenges require the need for more holistic assessments to obtain accurate recommendations for decision-making, as it was in HTA's foundations. VALUES In Doing Assessments of health TEchnologies (VALIDATE) methodology approaches complex technologies holistically to provide a deeper understanding of the problem through analysis of the heterogeneity of stakeholders' views, allowing for more comprehensive HTAs. This study aimed to assess a pharmaceutical clinical decision support system (CDSS) using VALIDATE.

Methods. A systematic review of the empirical evidence on CDSS was conducted according to PRISMA guidelines. PubMed, the Cochrane Library, and Web of Science databases were searched for literature published between 2000 and 2020. Additionally, a review of grey literature and semi-structured interviews with different hospital stakeholders (pharmacists, physicians, computer engineers, etc.) were conducted. Content analysis was used for data integration.

Results. Preliminary literature results indicated consensus regarding the effectiveness of CDSS. Nevertheless, when including multistakeholder views, CDSS appeared to not be fully accepted in clinical practice. The main reasons for this appeared to be alert fatigue and disruption of workflow. Preliminary results based on information from the literature were contrasted with stakeholder interview responses.

Conclusions. Incorporation of facts and stakeholder values into the problem definition and scoping for a health technology is essential to properly conduct HTAs. The lack of an inclusive multistakeholder scoping can lead to inaccurate information, and in this particular case to suboptimal CDSS implementation concerning decision-making for the technology being evaluated.

PP146 Use Of Carbon Dioxide In Endovascular Surgery To Prevent Contrast-Induced Nephropathy

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Introduction. Interventional procedures often use iodinated contrast media (ICM) to visualize the area of interest. However, the use of ICM can cause contrast-induced nephropathy (CIN), which is a frequent complication after catheterization and is associated with morbidity and mortality. CIN is also a common complication in patients with pre-existing chronic kidney disease, diabetes, and heart failure. The purpose of this analysis was to compare carbon dioxide (CO₂) with conventional contrast agents.

Methods. To assess the clinical effectiveness of CO₂ in preventing CIN, a systematic review of relevant literature, including international guidelines, from the Medline database was conducted. Imaging of the chest, aorta, coronary arteries, and cerebral circulation with CO₂ is limited, so effectiveness was determined in the

field of renal and peripheral artery angioplasty. The effect on intervention cost was the main outcome.

Results. Use of CO₂ generally reduced renal toxicity and anaphylactic reaction, but the benefits remain controversial. Angiography with CO₂ is reasonable when image accuracy is not crucial due to its low informative value. Strategies for preventing acute kidney injury demonstrated the effectiveness of sodium chloride administration before and after the procedure. Additionally, the absence of risk factors for kidney disease significantly reduced the risk of impaired renal function.

Conclusions. Although CO₂ is one of the alternative methods for visualization, it is not pivotal in preventing CIN, even though the manufacturers recommend CO₂ as the preferred contrast agent in patients with renal insufficiency who are allergic to ICM. The economic indicators for the use of CO₂ are similar to traditional visualization methods.

PP148 Liquid Biopsy For The Detection Of Ovarian Or Endometrial Cancer In Samples Taken From The Pap Smear: PapSEEK

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Introduction. The PapSEEK test is an emerging minimally invasive technique in which samples are collected from the endocervical or intrauterine cavity with the Papanicolaou (Pap) brush or the Tao brush to detect somatic mutations or aneuploidies indicating the presence of endometrial or ovarian cancer.

Methods. We systematically searched for articles published up to October 2020 in the following electronic databases: Medline, Embase, the Cochrane Library, and the Centre for Reviews and Dissemination. We included experimental studies, observational primary studies, and cost-effectiveness studies evaluating the safety, effectiveness, and cost effectiveness of the PapSEEK test for the early detection of ovarian or endometrial cancer. Relevant outcomes included sensitivity, specificity, the coefficient of variation, re-test rates, the incremental cost-effectiveness ratio, the incremental cost-utility ratio, and the cost of each alternative.

Results. A single relevant retrospective study was identified. In this study, samples from women with endometrial cancer (n = 656) and ovarian cancer (n = 254) were collected with the Pap brush and Tao brush and compared with samples from healthy women (n = 1,002). The diagnostic validity for somatic mutation or aneuploidies obtained with a Pap brush had a sensitivity of 81% for endometrial cancer and 33% for ovarian cancer, and a specificity of 99% for both conditions. When samples were collected from the intrauterine cavity with a Tao brush, the sensitivity increased to 93% for endometrial cancer and to 45% for ovarian cancer. The sensitivity of the PapSEEK test increased only for ovarian cancer when plasma samples to detect circulating tumor DNA were collected in addition to Pap smear samples.