MDS who were treatment-naïve, had a hemoglobin concentration of less than 10 grams per deciliter, and did not have a chromosome 5q deletion (non-del(5q) MDS). Red blood cell transfusion was allowed before the date of diagnosis. Patients were cloned and assigned to both treatment groups, thereby eliminating immortal time bias, and were censored as soon as they stopped following the assigned treatment strategy. This artificial censoring introduced selection bias, which was adjusted for by using inverse probability of censoring weighting. The weights model adjusted for time varying confounders.
Results: Of the 611 patients qualifying for the study, 282 started ESAs within the six-month grace period and 329 did not take ESAs. The median follow-up was 2.4 years (interquartile range 1.3 to 4.2). A naïve analysis of our cohort suggested that no ESA was significantly more beneficial than taking ESAs (hazard ratio [HR] at year four: 1.24, 95% confidence interval [CI]: 1.03, 1.50). However, after correcting for biases the adjusted Kaplan-Meier curves showed that ESAs were beneficial over the first two years (HR at year one: 0.75, 95% CI: 0.41, 1.39), compared with no ESAs. Thereafter there was no difference between treatment groups (HR at four years: 1.01, 95% CI: 0.80, 1.27).
Conclusions: We found that early—within six months of becoming eligible—initiation of ESAs as first-line therapy for treatment-naïve patients with non-del(5q) low-risk MDS and hemoglobin levels of less than 10 grams per deciliter improves survival over for the first two years. Using target trial emulation to make accurate survival estimates can improve decision-making in health technology assessment.

PD133 Exploring Real-World Data Based Financing Models For Lung Cancer Immunotherapy In The Czech Republic

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Introduction: In alignment with recommendations from the Czech Society for Oncology, immunotherapy is gaining prominence in managing metastatic lung cancer. Public health insurance in the Czech Republic covers immunotherapy for defined categories of these malignancies. Our study aimed to evaluate the impact of introducing performance-based risk-sharing agreements (PBRSA) on budgetary considerations for immunotherapy treatment.
Methods: In collaboration with the Masaryk Memorial Cancer Institute in Brno, we conducted a retrospective analysis of 127 patients with lung cancer who were treated with immunotherapy (42 received nivolumab) between 2018 and 2022. We explored the reimbursed indications for pembrolizumab, nivolumab, atezolizumab, and durvalumab. Real-world progression-free survival (PFS) data from the medical records were compared with PFS data from randomized controlled trials. Patients were classified as either successfully or unsuccessfully treated according to the PFS threshold established in the comparator arm of the respective trials. Additionally, we explored a hypothetical scenario involving the potential implementation of PBRSA depending on the level of outcome achieved.
Results: In patients with advanced lung cancer who had received prior chemotherapy, nivolumab succeeded in 29 patients but failed to meet the defined success threshold in 13 patients. Unsuccessful cases incurred an average cost of EUR9,300 per patient over a median treatment period of 1.7 months. In contrast, the cost of successful treatment exceeded EUR29,700 per patient, which was sustained for a median treatment duration of 5.5 months. Manufacturers could cover up to 66 percent of the cost associated with unsuccessful treatment in the 13 patients, which would exceed EUR41,000. This approach might cover the expenses for one additional patient. The same calculation was performed for all other checkpoint inhibitors.
Conclusions: The analysis emphasizes the vital role of risk-sharing agreements in enhancing the affordability and sustainability of high-cost advanced therapies. Discrepancies between real-world clinical data and registration studies challenge full reimbursement sustainability. By redistributing financial responsibility, PBRSA alleviate costs for insurers and simplify market entry for manufacturers, contributing to a dynamic and inclusive healthcare landscape.

PD134 Projecting The 10-Year Cost Of Care Burden For Depression Until 2032 In Hong Kong: A Real-World Evidence Based Markov Model

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Introduction: We developed a real-world evidence (RWE) based Markov model to project the 10-year cost of care for patients with depression from the public payer's perspective to inform early policy and resource planning in Hong Kong.
Methods: The model considered treatment-resistant depression (TRD) and development of comorbidities along the disease course. The outcomes included costs for all-cause and psychiatric care. From our territory-wide electronic medical records, we identified 25,190 patients with newly diagnosed depression during the period from 2014 to 2016, with follow-up until December 2020 for real-world time-to-event patterns. Costs and time varying transition inputs were derived using negative binomial and parametric survival modeling. The model is available as a closed cohort, which studies a fixed cohort of incident patients, or an open cohort that introduces new patients every year. Utilities values and the number of incident cases per year were derived from published sources.

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Results: There were 9,217 new patients with depression in 2023. Our closed cohort model projected that the cumulative cost of all-cause and psychiatric care for these patients would reach USD309 million and USD58 million by 2032, respectively. In our open cohort model, 55,849 to 57,896 active prevalent cases would cost more than USD322 million and USD61 million annually in all-cause and psychiatric care, respectively. Although less than 20 percent of patients would develop TRD or its associated comorbidities, they contribute 31 to 54 percent of the costs. The key cost drivers were the number of annual incident cases and the probability of developing TRD and associated comorbidities and of becoming a low-intensity service user. These factors are relevant to early disease stages.
Conclusions: A small proportion of patients with depression develop TRD, but they contribute to a high proportion of the care costs. Our projection also demonstrates the application of RWE to model the long-term costs of care, which can aid policymakers in anticipating foreseeable burden and undertaking budget planning to prepare for future care needs.

PD135 Real-World Evidence On The Effects Of Robotic Prostatectomy In Poland

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Introduction: Robot-assisted radical prostatectomy (RARP) was incorporated into the public healthcare system in Poland in April 2022. RARP quickly gained popularity among healthcare providers, constituting nearly 25 percent of all publicly financed prostatectomies by the end of 2022. The aim of this study was to evaluate the effects of RARP using early real-world data from the public reporting system.
Methods: The sample included 7,177 patients who had either RARP or conventional radical prostatectomy (CRP) between 27 March and 31 December 2022. CRP was performed as either an open or a laparoscopic procedure. Due to reporting limitations, a comparison with laparoscopic radical prostatectomy (LRP) only was carried out on a subset of 2,306 patients who had prostatectomy after 20 September 2022. Data analyzed included length of hospitalization, the percentage of patients who received transfusions of blood products or who were hospitalized within 30 days of discharge, and number of deaths.
Results: In total 2,190 patients had RARP. Compared with both CRP and LRP, RARP was associated with a reduction in hospital stay by 1.13 days (95% confidence interval [CI]: −1.27, −0.99; p<0.0001) and 0.83 days (95% CI: −1.02, −0.64; p<0.0001), respectively, and a lower risk of needing a transfusion of blood products, with odds ratios of 0.39 (95% CI: 0.31, 0.49; p<0.0001) and 0.53 (95% CI: 0.39, 0.77; p=0.0008), respectively. There were no statistically significant differences in rates of rehospitalization. Only three hospitalizations ended due to death. By 31 December 2022 only seven patients in the RARP group and 19 in the CRP group had died.
Conclusions: The findings of this study suggest that there is a marginal, though statistically significant, benefit with RARP, compared with CRP and LRP, that may be factored into economic evaluations of RARP.

PD136 Re-evaluation Of Chest X-Ray Screening For Lung Cancer With Consideration Of Study Context

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Introduction: Lung cancer causes a heavy burden worldwide and an efficient screening program is needed. Although low dose computed tomography screening has become mainstream for lung cancer screening, chest X-ray (CXR) screening has continued in Japan. We re-evaluated the efficacy and effectiveness of CXR screening and reconsidered the context of the studies.
Methods: We performed a systematic review and meta-analysis of CXR screening for lung cancer. The study design included randomized controlled trials (RCTs), cohort studies, and case-control studies (CCSs) that evaluated the efficacy or effectiveness of CXR screening. Searches were conducted in the PubMed, Cochrane Library, Web of Science, and Ichushi-Web databases for literature published up to April 2022. We examined the settings of the selected studies.
Results: From about 4,000 candidate articles, six RCTs, one cohort study, and six CCSs were selected. Five RCTs were conducted in the 1960s and 1970s, except for the Prostate, Lung, Colorectal, and Ovarian Cancer (PLCO) Screening Trial. Six CCSs conducted in Japan reported reductions in mortality from lung cancer. A meta-analysis of the six CCS showed a 47 percent reduction in mortality from lung cancer (adjusted odds ratio 0.53, 95% confidence interval: 0.50, 0.63). In the PLCO trial, mortality was reduced by nine percent at the six-year follow up, but this result was not statistically significant. The histological distribution of lung cancer was similar between the PLCO trial and the Japanese CCSs.
Conclusions: The dilution effect might affect the PLCO trial results because of extended follow up beyond the lead time of CXR screening. Although evidence on CXR screening for lung cancer is limited, CXR screening might be adopted in Japan considering the histological changes in lung cancer that have occurred due to the decline in smoking rate.

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