

Cost-effectiveness of NALIRIFOX compared to other first-line treatments for metastatic pancreatic cancer.

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Background: NALIRIFOX was recently approved for first-line treatment of metastatic pancreatic cancer, where combination chemotherapy remains the main treatment modality. We conducted a cost-effectiveness analysis of NALIRIFOX compared to both FOLFIRINOX and gemcitabine/protein-bound paclitaxel (GP). **Methods:** A partitioned survival model with three health states (progression-free, post-progression and death) was constructed to model the disease course. Using published data from NAPOLI-3, parametric survival curves were generated for NALIRIFOX, from which survival curves for FOLFIRINOX and GP were extrapolated using pooled efficacy data reported by a network meta-analysis of clinical trials. Model inputs were retrieved from the literature or other publicly available resources. Specifically, drug acquisition costs were from average wholesale prices in the Red Book while administration, disease monitoring and supportive care costs were from the CMS Physician Fee Schedule. Utility values to estimate quality-adjusted life years (QALY) were from the CALGB80303 trial. Adverse effects that were considered included anemia, neutropenia, febrile neutropenia, thrombocytopenia, diarrhea, peripheral neuropathy, nausea and vomiting, and fatigue. Adverse effect rates were based on data pooled from clinical trials while costs and disutility were obtained from a secondary analysis of claims data and a clinician survey, respectively. The time horizon was 5 years and utilized a third-party payer perspective. Both costs (\$USD 2024) and outcomes were discounted at 3% annually. A probabilistic sensitivity analysis was conducted by varying model parameters based on 95% confidence intervals if known or 10% in both directions otherwise. **Results:** The overall cost associated with NALIRIFOX was \$129,314, followed by GP (\$104,593) and FOLFIRINOX (\$41,528). Among the 3 regimens, NALIRIFOX incurred the highest treatment-related cost (\$105,533) but the lowest adverse effects management cost (\$16,541). On average, patients on NALIRIFOX gained a total of 1.14 life years (LY) or after adjusting for utility, 0.86 QALY. FOLFIRINOX led to 1.09 LY or 0.82 QALY while GP resulted in 0.99 LY or 0.75 QALY. Due to its higher cost and lower survival benefit, GP was dominated by FOLFIRINOX. Compared to FOLFIRINOX, the incremental cost-effectiveness ratio (ICER) of NALIRIFOX was \$1,952,062/QALY. In our sensitivity analysis, the probability of NALIRIFOX being cost-effective was 0% at all conventional ICER thresholds up to \$200,000/QALY. **Conclusions:** Due to the high drug acquisition cost, the ICER of NALIRIFOX far exceeds currently acceptable thresholds for economic value and NALIRIFOX is considered not cost-effective. This is despite that in our model among first line treatments for metastatic pancreatic cancer, NALIRIFOX was associated with reduced costs for managing adverse effects. Research Sponsor: None.