

Comparative effectiveness of NALIRIFOX vs. FOLFIRINOX in pancreatic cancer.

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Background: Metastatic pancreatic cancer is associated with limited survival, poor quality of life, and limited treatment options. FOLFIRINOX and gemcitabine/nab-paclitaxel (GNP) are associated with survival gain compared to gemcitabine and NALIRIFOX is associated with survival improvement compared to GNP. NALIRIFOX and FOLFIRINOX are not directly compared to each other. We conducted an analysis of oncologic benefits and costs of NALIRIFOX vs. FOLFIRINOX. **Methods:** A cost-effectiveness model was developed using partitioned survival analysis with three health states: progression-free, progression, and death. Data on overall survival and progression-free survival were derived from PRODIGE and NAPOLI-3 published data to reconstruct the states in the model. The time horizon of the model was set to 36 months. Costs included treatment costs and adverse event management as well as supportive care cost. We used Veteran Affairs' data for unit cost of each agent. To calculate the cost of treatment we assumed the average body surface area to be 1.79. Five adverse events (AEs) were included in the cost analysis: neutropenia, febrile neutropenia, anemia, diarrhea, and thrombocytopenia. We used the utility of 0.80 during PFS and 0.73 during progression for assessment of Quality Adjusted Life Year (QALY). The benefits and costs of treatment was calculated and used to estimate the incremental cost-effectiveness ratio (ICER) of NALIRIFOX compared with FOLFIRINOX. **Results:** The calculated PFS for FOLFIRINOX was 6.8 months and for NALIRIFOX was 8.9 months. Compared to FOLFIRINOX, NALIRIFOX was associated with an improvement in life year gain (11.97 months vs. 10.95 months). The monthly acquisition cost for NALIRIFOX was \$13,610 and for FOLFIRINOX \$5,501. Based on the probabilities of selected AEs, the monthly cost of AE management for NALIRIFOX was \$5,589 and for FOLFIRINOX was \$15,511. QALY for NALIRIFOX was 10.23 and for FOLFIRINOX was 9.59 months. The incremental cost effectiveness ratio for NALIRIFOX vs. FOLFIRINOX was \$1,368,937. **Conclusions:** In this modeling analysis, NALIRIFOX is associated with improvement in PFS and QALY. The analysis highlights the importance of AE management for improving quality of life and cost in the recipients of FOLFIRINOX. The economic value for use of NALIRIFOX is very high and outside of any conventional boundary of acceptable value threshold for treatment. Research Sponsor: None.