Aim: A randomized phase III trial showed that nab-P/C significantly improved the objective overall response rate (ORR) vs solvent-based P/C as first-line therapy in advanced NSCLC. This analysis aimed to understand the impact of achieving response, regardless of treatment, on survival and quality-of-life outcomes in the context of this clinical trial.

Methods: Pts with and without at least an objective confirmed partial response were compared using the Q-TWiST (quality-adjusted time without symptoms or toxicity) method, which estimates the quality-adjusted survival by incorporating toxicity, progression-free survival (PFS) and overall survival (OS) into a single measurement. In this approach, OS was partitioned into time: with grade ≥ 3 toxicity (TOX), without symptoms of progression or toxicity (TWiST), and after progression (REL). Mean Q-TWiST was calculated by taking the sum of the product of the time spent in each state by its respective utility. In the base case, the utilities were: TWiST = 1, TOX = 0.5, REL = 0.5. In sensitivity analyses, TOX and REL utilities varied from 0 to 1.

Results: In total, 1052 pts with stage IIIb/IV NSCLC were included in the analysis (median age 60 y). While responder status was not significantly associated with demographics, smoking status, or baseline performance status, responders (n = 302) were more likely than nonresponders (n = 750) to have squamous cell carcinoma (P = 0.043) or stage IIIB NSCLC at baseline (P = 0.006) and to receive more chemotherapy cycles/doses (P < 0.001). Responders vs nonresponders experienced significantly longer median OS (19.8 vs 9.2 months, P < 0.001) and PFS (9.6 vs 4.4 months, P < 0.001). In the base case, responders gained 5.3 months of mean Q-TWiST (13.8 vs 8.5 months; 95% CI for the difference, 4.4 - 6.1). The Q-TWiST difference ranged from 4.1 to 6.5 months in sensitivity analysis and from 4.8 to 5.6 months when stratified by histology and disease stage.

Conclusions: Tumor response is significantly associated with better outcomes, including quality-adjusted survival. Therefore, tumor response can be an important surrogate for assessment in treatment outcomes in NSCLC.

Disclosure: V. Hirsh: Honoraria for Celgene Advisory Board; C. Langer: Research support and advisory boards with Celgene; F. Ju-Lin: I am an employee of Pharmerit International which received research funding from Celgene for this project; Y. Wan: Yin Wan is an employee of Pharmerit International who received research funding from Celgene for this project; S. Whiting: Employment or leadership position and stock ownership, Celgene Corporation; T.J. Ong: TJ Ong is an employee of Celgene and owns stock; M. Botteman: Shareholder and employee of Pharmerit International which received research funding from Celgene Corporation for this project. All other authors have declared no conflicts of interest.