A randomized phase II study of pemetrexed in combination with cisplatin or carboplatin as first-line therapy for patients with locally advanced or metastatic non-small-cell lung cancer.

Pemetrexed plus cisplatin was approved for first-line treatment of non-small-cell lung cancer (NSCLC) in patients with nonsquamous histology after initiation of this study. This phase II study evaluated pemetrexed plus cisplatin and pemetrexed plus carboplatin as first-line treatments for stage IIIb/IV NSCLC. The patients were randomized (1:1) to 2 parallel arms: pemetrexed (500 mg/m\(^2\)) plus cisplatin (75 mg/m\(^2\)) or pemetrexed (500 mg/m\(^2\)) plus carboplatin (area under the curve 6) day 1 every 3 weeks (maximum, 6 cycles).

Progression-free survival (PFS) was the primary objective; secondary objectives included overall survival (OS), 1-year survival, and safety. Sixty-five patients were randomized to each treatment arm. The patients treated with pemetrexed plus cisplatin had a median age of 64 years and were predominantly men (42 [64.6%]) with nonsquamous histology (53 [81.5%]), stage IV (61 [92.4%]) disease, and a performance status of 0 (40 [61.5%]). Median PFS was 6.0 months, 6-month PFS rate was 50.5%, median OS was 11.7 months, and 1-year survival rate was 47.5%. Drug-related grade 3/4 toxicities included neutropenia (11 [16.9%]), anemia (5 [7.7%]),
thrombocytopenia (2 [3.1%]), and nausea (3 [4.6%]). Patients treated with pemetrexed plus carboplatin had a median age of 63 years, were predominantly men (46 [70.8%]) with nonsquamous histology (52 [80.0%]), stage IV (58 [86.6%]) disease, and a performance status of 0 (45 [69.2%]). The median PFS was 4.7 months, the 6-month PFS rate was 34.9%, median OS was 8.9 months, and 1-year survival rate was 39.2%. Drug-related grade 3/4 toxicities included neutropenia (17 [26.2%]), thrombocytopenia (11 [16.9%]), anemia (7 [10.8%]), and nausea (5 [7.7%]). Both the pemetrexed plus cisplatin and pemetrexed plus carboplatin arms met their primary endpoints and demonstrated efficacy and tolerability as first-line therapy in patients with advanced NSCLC. http://ClinicalTrials.gov: NCT00402051.