Aim: Locally advanced NSCLCs are not primarily resectable due to local invasion of vital structure or to the degree of nodal involvement. Intensive chemotherapy induction treatment could improve the response rate and potentially the rate of patients able to undergo radical intent local treatment. The present study aims to assess the response rate and the feasibility of induction chemotherapy with carboplatin, paclitaxel and gemcitabine followed by surgery and postoperative radiotherapy.

Methods: We retrospectively collected clinical data and radiological imaging from locally-advanced NSCLCs treated with carboplatin (AUC 6 d1), paclitaxel (200 mg/m², d 1) and gemcitabine (1000 mg/m² d1,8) for 3/4 courses, followed by surgery and/or radical intent radiotherapy. We analyzed the radiological response to chemotherapy according to RECIST v1.1 criteria as primary end-point. We collected the data about toxicity. Median Progression-free survival (PFS) and Overall survival (OS) of the study population have been estimated and correlated to radiological response, surgery and clinical features.

Results: 58 locally advanced NSCLCs were included in the study: 41 were radiologically staged as stage IIIA, 17 as stage III B according to the 7th TNM classification. After chemotherapy, 37 (64%) patients underwent surgery followed by adjuvant radiotherapy, one patient received radical intent radiotherapy. Median delayed time to surgery was 2 weeks. Partial response was observed in 36 (62%, 95%CI: 48%-74%) cases, progression in 6 (10%) cases. 36 (62%) patients experienced grade 3-4 hematological toxicity. Main non hematological toxicities were grade 1-2 nausea and arthralgia. One patient was hospitalized for febrile neutropenia. The median PFS and OS of the study population were 10 and 26 months respectively. One-year PFS and OS rate were 44% and 76%. Objective response and surgery were significantly associated both with PFS (p < 0.0001) and OS (p < 0.0001, p = 0.002). The multivariate analysis confirmed the independent prognostic role of response and surgery for PFS, whereas only response remained statistically significant for OS.

Conclusions: The intensive chemotherapy induction treatment was feasible and associated with a considerable radiological response rate. We are planning prospective validation of the proposed multimodality treatment.

Disclosure: All authors have declared no conflicts of interest.