

## NEW TREATMENT STRATEGY IN INOPERABLE LOCOREGIONALLY ADVANCED NON-SMALL CELL LUNG CANCER: C ARM CONE BEAM CT-GUIDED SELECTIVE INTRAARTERIAL CHEMOTHERAPY

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**Introduction - Purpose :** Non small cell lung cancer continues to represent disproportionately the number of patients with and the number of patient deaths from cancer. Aim of this study was to determine the efficacy and the toxicity of C arm Cone Beam CT (CACBCT) guided selective intraarterial chemotherapy (IACT) for patients who had inoperable locoregionally advanced NSCLC.

**Methods - Tools :** Our study included 27 NSCLC patients who were treated with IACT. Only patients with inoperable NSCLC who had a life expectancy longer than 3 months were included in study. They were previously untreated patients. The treatment was performed using intra-arterial platin based combination chemotherapy every 21 days for 2-4 cycles by CACBCT. In all patients, via the femoral artery, CACBCT angiographies were taken and the feeding arteries of the tumors were identified. These arteries were then selectively catheterized and then chemotherapy combination was infused. If patients had good response the treatment after first two cycles, we applied thirth IACT and then they underwent the surgery. Other patients had continued chemoradiotherapy. Chemotherapy; Cisplatin 70mg/m<sup>2</sup> and Dosetaxel 70 mg/m<sup>2</sup> combination or Carboplatin 5AUC and Paclitaxel 175 mg/m<sup>2</sup> combination was administered intraarterial at day 1.

**Findings :** The study included 27 patients who were treated intraarterial chemotherapy. Two patients were female and twenty-five patients were male. Thirteen of patients had non-squamous. The median age of the patients was 58 years (range 46-78 years). Median follow-up time 30.3 months. Pretreatment staging of the patients; seventeen (63%) patients with NSCLC were at stage IIIA and nine (33.3%) were at stage IIIB. The post-treatment radiological response evaluation of the patients is as follows: 3 patients (11.1%) had stable disease (SD), 19 patients (70.3 %) had a partial response (PR), 3 patients (11.1%) had a complete response (CR) and progressive disease (PD) was observed in 2 patients (7.4 %). Objective Response Rate (ORR) was 90.5%. Surgical resection was performed thirteen (%48.1) of the patients. A pathological complete response was achieved in 5 patients who were operated on after receiving IACH. Other patients: two patients were stage IA; two were stage IIA; four patients were stage 3A. Median follow-up time 21.2 months and this time OS was 63%. The mean progression-free survival (PFS) was 24.6 months (95% CI 19.1 to 30.2), while the median overall survival was 41.3 months. One year overall survival rate was %96.3 and two years overall survival rate was %55.5. In terms of toxicity grade 1-2 anemia in five patients, grade 3 neutropenia in two patients, grade 2 thrombocytopenia in one patient was detected. Alopecia was detected in all of patients.

**Discussion :** In this study, we showed that IACT is an effective and less toxic in inoperable locoregionally advanced NSCLC regardless of the histology. IACH could be effectively used as a combination therapy with surgery or chemo-radiotherapy.

**Keywords:** Non-small Cell Lung Cancer, intraarteriel chemotherapy