Results: The SES was significantly correlated with lower risk of lung cancer, including years of schooling, college or university degree, and household income. While cigarettes smoked per day, time spent watching TV, polyunsaturated fatty acids (PUFA), docosapentaenoic acid (DPA), eicosapentaenoic acid (EPA), and arachidonic acid (AA) in blood were significantly associated with higher risk of lung cancer. Suggestive risk factors for lung cancer were found to be serum vitamin A1, copper in blood, docosahexaenoic acid (DHA) in blood, and body fat percentage.

Table: 1224P

Exposure	OR(95%CI)	*P*-value
Years of schooling	0.49 (0.35 - 0.68)	3.37E-05
College or university degree	0.21 (0.14 - 0.31)	1.10E-14
Household income	0.44 (0.30 - 0.66)	7.12E-05
Cigarettes smoked per day	1.34 (1.28 - 1.41)	8.45E-35
Time spent watching TV	1.96 (1.32 - 2.89)	7.65E-04
PUFA in blood	1.15 (1.06 - 1.24)	4.14E-04
DPA in blood	7.83 (3.41 - 17.97)	1.19E-06
EPA in blood	6.49 (2.38 - 17.68)	2.57E-04
AA in blood	3.97 (1.92 - 8.22)	2.02E-04
Serum vitamin A1	1.44 (1.01 - 2.06)	4.58E-02
Cooper in blood	1.14 (1.01 - 1.29)	3.91E-02
DHA in blood	1.28 (1.07 - 1.54)	6.42E-03
Body fat percentage	1.26 (1.06 - 1.50)	1.02E-02

Conclusions: Approaches like improving SES, cigarette cessation, declining time spent watching TV, and reducing PUFA in blood can be effective in lung cancer prevention, considering the causalities identified in our study.

Legal entity responsible for the study: The authors.

Funding: Has not received any funding.

Disclosure: All authors have declared no conflicts of interest.

https://doi.org/10.1016/j.annonc.2020.08.1426

1225P The prognostic value of textural features of primary tumour and systemic inflammation markers in NSCLC

U. Aydos[1], O. Sutcuoglu[2], U.O. Akdemir[1], O. Yazıcı[2], L.O. Atay[1]

[1]Nuclear Medicine, Gazi University - Faculty of Medicine, Ankara, Turkey; [2]Medical Oncology, Gazi University - Faculty of Medicine, Ankara, Turkey

Background: Tumor heterogeneity and systemic inflammation are considered as important prognostic factors in cancers. Texture analysis is a method for extracting information about tumor heterogeneity from diagnostic images. The aims of this study were to evaluate the relationship between texture features of primary tumors, neutrophil to lymphocyte ratio (NLR), platelet to lymphocyte ratio (PLR) and modified Glasgow prognostic score (mGPS) of patients with non-small cell lung cancer (NSCLC) and and to evaluate their prognostic values for predicting clinical outcomes.

Methods: FDG PET/CT images of 90 patients with NSCLC prior to surgery were analyzed retrospectively. We acquired data related to metabolism (SUVmax, SUVmean, MTV, TLG) and texture features of primary tumors. The relationship of metabolic and textural features with NLR, PLR and mGPS categories were evaluated with Mann Whitney U test. Prognostic values of imaging features and systemic inflammation markers for predicting OS were assessed by using the univariate and multivariate Cox proportional hazards regression models.

Results: MTV and TLG had significantly higher values in patients with high NLR (>3) than in those with low NLR (≤ 3), in patients with high PLR (>150) than in those with low PLR (≤ 150) and in patients with high mGPS (≥ 1) compared to those with mGPS $= 0$ ($p<0.05$). Textural heterogeneity features showed significantly higher values in patients with high NLR, high PLR and high mGPS compared to those with low NLR, low PLR and mGPS $= 0$, respectively ($p<0.05$). Textural homogeneity (angular second moment) also showed significantly lower values in patients with high NLR compared to those with low NLR ($p=0.025$). The median follow-up duration after diagnosis was 48.5 months (5-124 months). In the multivariate Cox regression model, grey level non-uniformity (GLNU) and mGPS were found as independent prognostic factors for OS (HR, 1.005, 95% CI, 1.002-1.008, $p=0.004$; HR, 4.23, 95% CI, 1.9-9.5, $p<0.001$, respectively).

Conclusions: Metabolic activity and textural heterogeneity of tumors were significantly associated with systemic inflammatory response in patients with NSCLC. PET textural heterogeneity feature (GLNU) and mGPS were found as independent predictors of mortality.

Legal entity responsible for the study: The authors.

Funding: Has not received any funding.

Disclosure: All authors have declared no conflicts of interest.

https://doi.org/10.1016/j.annonc.2020.08.1427

1226P Curative treatment in EGFR mt+ NSCLC stage III by induction TKI-chemotherapy combination: Feasibility and outcome in 7 cases

L. Heukamp[1], J. Roeper[2], M. Falk[1], B. Kah[3], M. Tiemann[4], D. Scriba[5], R. Prenzel[6], K. Willborn[7], F. Griesinger[8]

[1]Molecular Pathology Department, Hematopathology Hamburg, Hamburg, Germany; [2]Department of Internal Medicine-Oncology, Pius Hospital Oldenburg, University of Oldenburg, Oldenburg, Germany; [3]Biology, Institut für Hämatopathologie Hamburg, Hamburg, Germany; [4]Hematopathology Hamburg, Hamburg Hematopathology Institute, Hamburg, Germany; [5]Department of Thoracic Surgery, Pius Hospital Oldenburg, Oldenburg, Germany; [6]Department of Internal Medicine, Pneumology and Gastroenterology, Pius Hospital Oldenburg, Oldenburg, Germany; [7]Clinic for Radiotherapy and Radio-Oncology, Pius Hospital Oldenburg, Oldenburg, Germany; [8]Hematology and Oncology, Pius Hospital, University of Oldenburg, Oldenburg, Germany

Background: EGFR TKI's are a mainstay in the treatment of metastatic NSCLC with EGFR mutations, however their use in the curative setting is not yet standard of care. Recently, combination of TKI and chemotherapy has been shown to improve ORR, PFS and OS in the metastatic setting. Induction therapy with chemotherapy with or without radiotherapy is an established approach in stages II and III, however no data exist for induction therapy with TKI and chemotherapy in EGFR mt+ NSCLC. Here we describe the outcome of 7 patients with EGFR mt+ NSCLC, all stage III, treated with 1st generation TKI in combination with chemotherapy as induction therapy.

Methods: 7/7 patients had adenocarcinoma, 5 with EGFR exon 19 and 2 with EGFR L858R. Patients received erlotinib (n=2) or gefitinib (n=5) for 10 days followed by TKI in combination with chemotherapy (docetaxel/cisplatin (n=4), paclitaxel/carboplatin (n=3)) for 3 cycles. RECIST radiologic response as well as regression grading according to Junker et al. was performed on the resection specimens.

Results: All 7 patients achieved radiologic PR after 2 cycles, all tumors were R0 resected. pCR was achieved in the primary tumor in 2/7, while the other 5 patients did not achieve pCR or MPR in the primary tumor. In the mediastinal lymph nodes, MPR was achieved in 6/7 patients (1 pCR). With the exception of the 2 patients achieving pCR in the primary tumor, all other 5 patients relapsed at 8 to 17 (median 12) months, 3/5 with CNS as 1st relapse site and 2/5 with other sites. With a median follow up of 46 months (13-68), 3 patients are alive at 13+, 44+, 67+ months and one patient died in CR of secondary cancer at 51 months. Median OS of the 7 patients was 51 months and median PFS was 17 months.

Conclusions: In conclusion 1st generation TKI-chemotherapy induction in EGFR mt+ NSCLC is feasible, leads to high MPR rates in mediastinal lymph nodes and lower pathologic response rates in the primary tumors. pCR in the primary tumor may predict better outcome. As CNS is the most frequent site of relapse this site might be of special interest in further induction studies on EGFR mt+ NSCLC.

Legal entity responsible for the study: Pius Hospital Oldenburg.

Funding: Partly funded by AstraZeneca.

Disclosure: L. Heukamp: Honoraria (self), Advisory/Consultancy: AstraZeneca; Honoraria (self), Advisory/Consultancy: Boehringer Ingelheim; Honoraria (self), Advisory/Consultancy: Novartis; Honoraria (self), Advisory/Consultancy: Roche; Honoraria (self), Advisory/Consultancy: Pfizer; Honoraria (self), Advisory/Consultancy: BMS; Honoraria (self), Advisory/Consultancy: MSD; Honoraria (self), Advisory/Consultancy: Siemens. J. Roeper: Honoraria (self): Boehringer Ingelheim; Honoraria (self): AstraZeneca; Honoraria (self): Roche. M. Falk: Honoraria (self), Advisory/Consultancy: Boehringer Ingelheim; Advisory/Consultancy: Pfizer; Honoraria (self): Roche; Honoraria (self): AstraZeneca. M. Tiemann: Honoraria (self), Advisory/Consultancy, Research grant/Funding (institution): Novartis; Honoraria (self), Advisory/Consultancy: Boehringer Ingelheim; Honoraria (self), Advisory/Consultancy: MSD; Honoraria (self), Advisory/Consultancy: BMS; Honoraria (self), Advisory/Consultancy: Roche; Honoraria (self), Advisory/Consultancy: AstraZeneca. F. Griesinger: Honoraria (self), Advisory/Consultancy, Speaker Bureau/Expert testimony, Research grant/Funding (institution), Travel/Accommodation/Expenses: AstraZeneca; Honoraria (self), Advisory/Consultancy, Speaker Bureau/Expert testimony, Research grant/Funding (institution), Travel/Accommodation/Expenses: Boehringer Ingelheim; Honoraria (self), Advisory/Consultancy, Speaker Bureau/Expert testimony, Research grant/Funding (institution), Travel/Accommodation/Expenses: BMS; Honoraria (self), Advisory/Consultancy, Speaker Bureau/Expert testimony, Research grant/Funding (institution), Travel/Accommodation/Expenses: MSD; Honoraria (self), Advisory/Consultancy, Speaker Bureau/Expert testimony, Research grant/Funding (institution), Travel/Accommodation/Expenses: Siemens; Honoraria (self), Advisory/Consultancy, Speaker Bureau/Expert testimony, Research grant/Funding (institution), Travel/Accommodation/Expenses: Novartis; Honoraria (self), Advisory/Consultancy, Speaker Bureau/Expert testimony, Research grant/Funding (institution), Travel/Accommodation/Expenses: Pfizer; Honoraria (self), Advisory/Consultancy, Speaker Bureau/Expert testimony, Research grant/Funding (institution), Travel/Accommodation/Expenses: Takeda; Honoraria (self), Advisory/Consultancy, Speaker Bureau/Expert testimony, Research grant/Funding (institution), Travel/Accommodation/Expenses: Lilly; Honoraria (self), Advisory/Consultancy, Speaker Bureau/Expert testimony, Research grant/Funding (institution), Travel/Accommodation/Expenses: Celgene; Honoraria (self), Advisory/Consultancy, Speaker Bureau/Expert testimony, Travel/Accommodation/Expenses: AbbVie. All other authors have declared no conflicts of interest.

https://doi.org/10.1016/j.annonc.2020.08.1428