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Title: Loss of heterozygosity of PTEN in patients with non-small cell lung cancer treated and not treated with neoadjuvant chemotherapy

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Body: Introduction: Lung cancer is the major cause of cancer-related death worldwide with five year survival rate remains at about 15% for all stages. The major reason for the low survival is that at the time of diagnosis most of the patients are beyond the effective treatment. Aim: To examine the loss of heterozygosity in PTEN in non-small cell lung cancer (NSCLC), in order to evaluate its role in their pathogenesis and impact on patient survival. Method: DNA was isolated from tumor and corresponding normal tissues of 35 patients with NSCLC treated with neoadjuvant chemotherapy and from 35 patients with NSCLC who did not receive it. Samples were amplified and subjected to fragment analysis. The obtained results were correlated with patients' clinicopathological parameters. Results: In both groups of patients LOH PTEN was detected in 50% of samples. Significant correlation ($p=0.17$) was observed when the presence of PTEN alteration was examined regarding the NSCLC subtypes in the group without adjuvant chemotherapy. LOH PTEN was present in about 50% patients with squamocellular carcinoma (SCC), in 43% patients with stage III of tumor disease who did not receive chemotherapy and uniformly distributed among patients with different stage of the NSCLC who were treated preoperatively. LOH PTEN did not influence patients' survival. Conclusion: For the NSCLC patients without preoperative chemotherapy treatment LOH PTEN could be considered as a potential molecular marker for the specific NSCLC types (i.e. SCC) and for those with more aggressive disease (i.e. stage III) and potential therapeutic target for more aggressive form of NSCLC.