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BOOK OF ABSTRACTS

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INVESTIGATION OF EPIDERMAL GROWTH FACTOR RECEPTOR POLYMORPHISM OF LUNG CANCER PATIENTS

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Introduction: Overproduction of epidermal growth factor receptor (EGFR) is very common in different human tumors, including lung cancer. Polymorphisms in the promoter region of *EGFR* may contribute to the individual differences of EGFR expression and disease susceptibility or response to treatment.
Aim: To determine *EGFR* SNPs frequencies among lung cancer patients in the Republic of Srpska.
Methods: DNA samples were obtained from 34 lung cancer patients peripheral blood using commercial extraction kit. *EGFR* polymorphisms rs712830 (-191C>A) and rs2293347 (181946G>A) were genotyped using polymerase chain reaction – restriction fragment length polymorphism method. To detect -191C>A polymorphism, PCR products were incubated with restriction enzyme *Sac*II and *Tfi*I for 181946G>A polymorphism.
Results: Study determined the frequency of two SNPs with respect to lung cancer type, gender, age and smoking status. Statistically significant differences were not found related to cancers type. Patients with adenocarcinoma reported more frequently smoking (53,33%) compared to the patients with other tumor types (12,50%), especially those younger than 65 years of age (47,06%). Results showed that the most frequent haplotype for -191C>A is CG and for 181946G>A GG (p= 0.044, Chi Square test). In addition, similar haplotype was observed/detected in patients younger than 65 years.
Conclusion: Study confirm that *EGFR* polymorphism research is significant for determinating future cancer markers. Futher regional research is required to defined specific haplotype with respect to tumor type and risk factors, which in the future can be used as genetic marker for susceptibility and prognosis of lung cancer.

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