

Oncology of the chest

Effect of polymorphisms of selected DNA repair genes on lung cancer development with respect to chromium exposure.

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Objective: Chromium is a well-known mutagen and carcinogen involved in lung cancer development. DNA repair genes play an important role in eliminating of genetic changes caused by chromium exposure. In the present study, we investigated the polymorphisms of following DNA repair genes as *XRCC3* participating in homologous recombination, *hOOG1* involved in base excision repair as well as *MLH1* and *MSH2* functioning in mismatch repair and the risk they present towards the development of lung cancer with emphasis to effect of chromium exposure.

Material and methods: We analysed 106 individuals; 45 patients exposed to chromium with diagnosed lung cancer and 61 healthy controls. Genotypes were determined by PCR-RFLP method.

Results: We found out increased risk of lung cancer development in *hOOG1* (rs1052133) CC genotype in dominant model (OR = 1.862), and in *MLH1* (rs1800734) AA genotype in recessive model (OR= 4.28).

Conclusions: We conclude that gene polymorphisms in DNA repair genes may underscore the risk of lung cancer development in chromium exposed individuals.

Acknowledgements: This work was supported by the Ministry of Health of the Slovak Republic Grant No. 2012/25-UKMA-2, APVV-0412-11 and VEGA 1/0336/12.