Gene environment interactions: the case of asbestosis

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The gene-environment interactions will be presented on the example of our study into asbestosis.

Our study included 262 cases with asbestosis and 265 controls with no asbestos-related disease. Data on cumulative asbestos exposure and smoking were available. PCR based methods were used for genotyping. To assess asbestosis risk, logistic regression analysis was used.

The associations between MnSOD Ala–9Val polymorphism and the risk of asbestosis and between iNOS genotypes and asbestosis were modified by CA –262 C > T polymorphism. A strong interaction was found between GSTM1-null polymorphism and smoking, iNOS(CCTTT)ₙ polymorphism and smoking, and between iNOS(CCTTT)ₙ polymorphism and cumulative asbestos exposure.

The findings of our study suggest that in addition to environmental and/or occupational exposure to hazards, the genetic factors as well as the interactions between different genotypes, genotypes and lifestyle factors, and between genotypes and environmental/occupational exposure may have an important influence on the development of diseases.