Comment on the article Genetic contribution to all cancers: the first demonstration using the model of breast cancers from Poland stratified by age at diagnosis and tumour pathology by Lubinski et al., Breast Cancer Res Treat 2008 Apr 15

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There is no doubt that mutation carriers in genes involved in DNA repair can be affected by a hostile environment more severely and accumulate a greater number of somatic mutations. It is estimated that the TP53 gene is mutated in about 50% of cancers [1]. Should we call such cancer sporadic, or is it genetically predetermined now? Do the authors believe that persons not possessing the listed (and some other) markers could smoke, be obese and enjoy mutagens without being punished?

Taking into account the high rate of genetic polymorphisms in the population, the aim of the study – to verify the hypothesis that genetic polymorphisms are associated with a predisposition to all malignancies – is hardly achieved as the relative risk seems to be small and thus other, possibly environmental factors could easily have a greater impact on the outcome in terms of tumour development. The results might reflect, in fact, the genetic variability within the population.

According to the results, 9% of breast cancer cases did not show any marker and 16.6% (162) of control group women were free of any marker tested. The main clinical consequence of the study in our opinion could be the possibility to release “marker negative” women from an unnecessary mammographic screening programme. But to receive the ultimate verification of the hypothesis, it will be necessary to perform a follow-up study on this group of women and to wait some 30-40 years. Besides, there is a great probability that during the next years several more cancer predisposing candidate genes will be discovered and it could easily lead to the situation that at least one marker will be found in 100% of cases and controls. If so, this study approach could be considered as an important contribution to overall understanding about tumorigenesis, but it is difficult to predict its application in clinical practice in the near future.

References