Evaluation of SNPs in miR-146a, miR196a2 and miR-499 as low-penetrance alleles in German and Italian familial breast cancer cases.

Recently, the SNPs rs11614913 in hsa-mir-196a2 and rs3746444 in hsa-mir-499 were reported to be associated with increased breast cancer risk, and the SNP rs2910164 in hsa-mir-146a was shown to have an effect on age of breast cancer diagnosis. In order to further investigate the effect of these SNPs, we genotyped a total of 1894 breast cancer cases negative for disease-causing mutations or unclassified variants in BRCA1 and BRCA2, and 2760 controls from Germany and Italy. We compared the genotype and allele frequencies of rs2910164, rs11614913 and rs3746444 in cases versus controls of the German and Italian series, and of the two series combined; we also investigated the effect of the three SNPs on age at breast cancer diagnosis. None of the performed analyses showed statistically significant results. In conclusion, our data suggested lack of association between SNPs rs2910164, rs11614913 and rs3746444 and breast cancer risk, or age at breast cancer onset.