The single nucleotide polymorphism IVS1+309 in mouse double minute 2 does not affect risk of familial breast cancer.

Abstract:

The mouse double minute 2 (MDM2) oncoprotein promotes cell survival and cell cycle progression by inhibiting the p53 tumor suppressor protein. Further, MDM2 overexpression can inhibit DNA double-strand break repair in a p53-independent manner. Recently, it was shown that a single nucleotide polymorphism (SNP) in the MDM2 promoter was associated with an accelerated tumor formation in individuals with a p53 mutation. The present case-control study investigated the association of this SNP (IVS1+309) with the risk and the age of onset of familial breast cancer in patients with unknown p53 mutation status. Data from 549 women affected by familial breast cancer and 1,065 healthy controls were analyzed. The cases did not carry BRCA1/2 mutations. Cases and controls showed a similar genotype distribution and the SNP did not seem to modify the age of onset of familial breast cancer. The data were also examined taking into account the presence of any additional cancer after breast cancer and the family history of cases; however, no association was found. These results suggest that the SNP IVS1+309 alone affects neither the risk nor the age of onset of heritable breast cancer.