Evaluation of a candidate breast cancer associated SNP in ERCC4 as a risk modifier in BRCA1 and BRCA2 mutation carriers. Results from the Consortium of Investigators of Modifiers of BRCA1/BRCA2 (CIMBA).

BACKGROUND: In this study we aimed to evaluate the role of a SNP in intron 1 of the ERCC4 gene (rs744154), previously reported to be associated with a reduced risk of breast cancer in the general population, as a breast cancer risk modifier in BRCA1 and BRCA2 mutation carriers. METHODS: We have genotyped rs744154 in 9408 BRCA1 and 5632 BRCA2 mutation carriers from the Consortium of Investigators of Modifiers of BRCA1/2 (CIMBA) and assessed its association with breast cancer risk using a retrospective weighted cohort approach. RESULTS: We found no evidence of association with breast cancer risk for BRCA1 (per-allele HR: 0.98, 95% CI: 0.93-1.04, P = 0.5) or BRCA2 (per-allele HR: 0.97, 95% CI: 0.89-1.06, P = 0.5) mutation carriers. CONCLUSION: This SNP is not a significant modifier of breast cancer risk for mutation carriers, though weak associations cannot be ruled out.