COLORECTAL CANCER TELOMERE LENGTH AND RISK OF CRC

Telomere length is a heritable trait, and polymorphisms exist that are associated with it. Findings from retrospective studies have demonstrated that short telomere length is associated with an increased risk of malignancy, including colorectal cancer (CRC). However, some of these studies have produced conflicting results.

In a large sample population, Jones and colleagues investigated whether candidate single nucleotide polymorphisms (SNPs) in telomere pathway genes were associated with telomere length in leukocytes. A separate search was conducted for SNPs associated with an increased risk of CRC (obtained as part of a genome-wide association study of CRC predisposition).

The results from this study confirm previous findings that SNPs close to the telomerase reverse transcriptase (*TERC*) gene are associated with telomere length in human leukocytes. In particular, carriers of the common allele at SNP rs10936599 had significantly longer telomeres. This same allele was also found to be associated with an increased risk of both CRC and colorectal adenomas. This finding is somewhat contrary to expectations given that shorter telomeres have classically been associated with cancer risk, as mentioned above.

“The results demonstrate the existence of an association between telomere length and CRC disposition, but show that this association is more complex than previously suspected,” the authors write. One potential mechanism for this association between longer telomere length and risk of CRC is reduced levels of cell senescence or death. The authors also speculate that the previously found association between short telomere length and risk of CRC may be a result of disease or differential survival rather than a cause.

Isobel Franks

Original article Jones, A. M. *et al.* *TERC* polymorphisms are associated both with susceptibility to colorectal cancer and with longer telomeres. *Gut* doi:10.1136/gut.2011.239772