Telomere length and lifestyle factors in breast cancer patients

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Abstract

Telomeres are highly specialized structures capping the ends of chromosomes that ensure genome integrity during replication. As telomere length is an indicator of cell aging, telomere shortening has been linked to aging-related diseases, especially cancer. Several studies suggest that lifestyle factors have an impact on telomere length. Smoking, alcohol abuse, sedentary lifestyle and obesity had been associated with telomere shortening in peripheral white blood cells. These same factors are also associated with breast cancer risk and prognosis. However, little is known about the effect of these modifiable factors on telomere maintenance in women with breast cancer. In this study, using a highly reproducible PCR method, we measured telomere length in peripheral white blood cells obtained before surgery from 162 breast cancer patients recruited consecutively and for which complete data on lifestyle factors were collected. In our population, physical activity was positively correlated with longer telomeres, especially physical activity related to occupation and transportation. No correlation was observed for recreational activities, alcohol consumption, smoking and anthropometric measures. Since white blood cells are involved in anticancer immune responses, these findings suggest that even low intensity regular physical activity could be effectively recommended to breast cancer patients, and may contribute to the control of cancer after conventional therapies.

Biography

Kaoutar Ennour-Idrissi pursuing her MSc studies in Clinical Epidemiology at Laval University. She is a Physician (medical degree obtained from Caddi Ayyad University) specialized in Anatomical Pathology. She has received many awards.