EDITORIAL

Introduction to the third issue of Aging and Cancer

Dr. Samuel Waxman has dedicated his career to the treatment of cancer patients and to cancer research. While he led an extraordinarily successful medical practice for 45 years, he understood very early that knowledge is power and that without research, cancer treatment would remain highly toxic.

His passion for research is best illustrated by the creation of the Samuel Waxman Cancer Research Foundation (SWCRF) in 1976. The SWCRF currently funds a network of 30 researchers across the world and raised over $100 million for cancer research.

To this day, the passion of this remarkable physician-scientist has only become stronger. His most recent goal is to understand the link between cancer and aging. While cancer is known to be an age-related disease, surprisingly, little research focuses on how and why cancer is more frequent in older individuals.

Dr. Waxman has, therefore, not only established collaboration between his foundation and the National Institute of Aging to specifically fund research projects aimed at understanding the link between aging and cancer but also teamed up with Wiley Publishing to launch this new journal in 2020.

In this third edition of Aging and Cancer, three articles from SWCRF investigators were selected to illustrate the range of questions and approaches needed to cover the complexity of the link between aging and cancer.

The first article by our group (Jenkins et al. Are the estrogen receptor and SIRT3 axes of the mitochondrial UPR key regulators of breast cancer sub-type determination according to age? Aging and Cancer, 2021. https://doi.org/10.1002/aac2.12035) focuses on the counterintuitive observation that breast cancer in post-menopausal women, which have much lower levels of circulating estrogen due to the cessation of ovarian function at menopause, tends to develop cancers that show elevated expression of the estrogen receptor.

The second article by Edward Evans and SWCRF investigator James DeGregori (Evans et al. Cells with Cancer-associated Mutations Overtake Our Tissues as We Age. Aging and Cancer, 2021) uses an unbiased approach of a meta-analysis of published sequencing data on normal tissues to determine how many cancer-associated mutations are present in cancer-free individuals with age. They present evidence that these mutations are actually found at high frequency across tissues. This finding immediately raises the question as to why some individuals go on to develop cancer, while others do not.

In direct line with the Evans study, the third article by SWCRF-associated investigator Paolo Boffetta and colleagues (Franchi et al. Developing a multimorbidity prognostic score in elderly patients with solid cancer using administrative databases from Italy. Aging and Cancer, 2021) takes an epidemiological approach to interrogate multiple conditions and their association with Cancer Multimorbidity Score (CMS). Their study suggests that the CMS may be used clinically to identify cancer patients at higher risk of mortality within 5 years.

Finally, a fourth article by SWCRF investigator Ruibao Ren and colleagues (Li et al. The potential of cord blood to replenish young immune cells against cancer. Aging and Cancer. 2021;2:36–44. https://doi.org/10.1002/aac2.12032) was published in the second issue of Aging and Cancer and focused on whether interventions aimed at improving healthy aging can reduce the risk of cancer with age. In this review, the authors summarized the most recent findings regarding the potential therapies leveraging cord blood to replenish young immune cells in elderly cancer patients.

Collectively, these perspective, review, and research articles provide a brief overview of some of the research performed by scientists funded by the SWCRF in the emerging field of Aging and Cancer.

SWCRF funding recipient since 2002.

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