High risk of colorectal cancer in men only partly explainable

Throughout the world, more men than women develop colorectal cancer

24.09.2021 - Scientists from the German Cancer Research Center have now analyzed the extent to which known and presumed risk and protective factors contribute to this considerably higher risk of disease. Surprisingly, they found that only about half of this excess risk can be explained by the known risk factors. Further factors that increase the risk of colorectal cancer need to be identified and evaluated to improve screening in men in future.

Almost 55,000 men develop colorectal cancer (CRC) in Germany every year. CRC is one of the most common types of cancer worldwide. It affects men considerably more often than women across the world. In Germany, the annual age-adjusted incidence is 46 per 100,000 in men, while this figure is only 28 in women. The difference is even greater for advanced adenomas, precursors of CRC.

The extent to which the various potential risk and protective factors account for these considerable differences is unclear. Examples of these factors include female sex hormones, which are known to reduce the risk of CRC. Moreover, higher consumption of tobacco products and red meats has been documented among men, both of which are lifestyle factors that increase the risk of CRC.

Hermann Brenner and a team of researchers from the German Cancer Research Center (DKFZ) investigated whether these different known and presumed factors fully explain the large difference between the sexes. To do so, the researchers evaluated data on almost 16,000 participants who had undergone colonoscopy screening for CRC in the KolosSal study, a scientific study monitoring and evaluating the effectiveness of this screening across the German federal state of Saarland.

In their current study, the Heidelberg-based epidemiologists considered all known and presumed risk and protective factors in CRC: age, family history of disease, diabetes, previous colonoscopy, use of aspirin and statins, smoking, alcohol consumption, weight and height, physical activity, consump-
tion of red meat and sausages, fruit, vegetables, and wholegrain products, and in women the use of hormone replacement therapies.

CRC or advanced adenomas were found during colonoscopy screening twice as often in men as in women (age-adjusted). After extensive adjustment for the various factors, they were shown to account for around half of the excess risk in men. In patients with rectal cancer, these factors play slightly less of a role than in those with other types of CRC. "Conversely, however, that means that we do not yet know what causes the other half of this excess risk," remarked study director Hermann Brenner.

There are good reasons to believe that the different levels of hormones in men and women have an even greater impact than is estimated using their current calculations. According to Brenner, even more detailed data need to be obtained in future studies, particularly regarding pregnancies, use of the contraceptive pill, breastfeeding, the beginning and end of menstruation, and other lifestyle and diet-related factors. "At any rate our results once again show how important it is for men in particular to take advantage of CRC screening, to carry out stool-based tests or go ahead and have a screening colonoscopy!"

Original publication:

Tobias Niedermaier, Thomas Heisser, Anton Gies, Feng Guo, Efrat L. Amitay, Michael Hoffmeister, Hermann Brenner; "To what extent is male excess risk of advanced colorectal neoplasms explained by known risk factors? Results from a large German screening population"; International Journal of Cancer; 2021