

European Association of Urology – Press Release

Early menopause in smokers linked to bladder cancer

Published on: Mar 15, 2019

Barcelona: Research shows that experiencing menopause before the age of 45 is associated with a higher risk of bladder cancer. This higher risk was notable if the woman is a smoker. The study, which looked at health outcomes of more than 220,000 US Nurses, is presented at the European Association of Urology congress in Barcelona.

Bladder cancer is the 6th most common cancer diagnosed in Europe*. It is more common in men than in women, but women are more likely to suffer from advanced bladder cancer and are less likely to survive than men. Around 27,000 European women and 19,000 US women are diagnosed with bladder cancer each year.

The US and European scientists studied the medical history of nurses who had enrolled in the Nurses' Health Study I and II, which have been following the health outcomes of more than 220,000 US nurses since 1976. They found that women who went into menopause before the age of 45 were 45% more likely to have bladder cancer than those who had later menopause (after 50). If these women had smoked, the risk of bladder cancer was 53% greater than women who had later menopause. Around 1 woman in 20 undergoes early menopause before the age of 45, the average age at menopause is 51 in developed countries.

Lead researcher Dr Mohammad Abufaraj (now working at the University of Vienna) commented:

“We found that smoking women who experienced menopause before they were 45 years old had a greater risk of bladder cancer. Smoking remains the most important risk factor for bladder cancer. Our data also revealed that it is unlikely that female factors such as age when periods begin, number of pregnancies, oral contraceptive use or the use of hormone replacement therapy are associated with bladder cancer risk. Smoking is associated with earlier age at menopause thereby further increasing the risk of developing bladder cancer.”

The number of cases and the number of people who die from bladder cancer varies significantly from country to country. In general, around 3 times more men than women get bladder cancer, but the mortality rate in women is around 40% higher**. There are many explanations for these differences including delay in diagnosis, genetic/epigenetic factors and hormonal factors. Dr Abufaraj added:

“This study indicates that earlier age at menopause (that is, shorter reproductive life) seems to increase the risk of bladder cancer. Our primary interpretation is that a factor like smoking, which is known to correlate with earlier age at menopause, remains of grave concern as the main cause of bladder cancer. It reinforces the warning that smoking really is harmful in ways that we might not have easily imagined.”

Previous research from the same research team has shown that smoking has a dose-response relationship with prognosis in both early and advanced bladder cancer. In other words, cigarette consumption worsens outcomes such as response to therapy and mortality. 10 years after stopping smoking, this risk had returned to the same level as that of non-smokers***.

Commenting, Professor Arnulf Stenzl, Chairman EAU Scientific Congress Committee (Eberhard-Karls-University in Tübingen) said:

“In this long term study smoking clearly sticks out as the underlying reason for the increased incidence of bladder cancer. However, we need to remain open to other factors causing bladder cancer, such as hormonal changes leading to earlier menopause; this work indicates that these changes may themselves be a result of long term nicotine exposure.”

This is an independent comment; Professor Stenzl was not involved in this work.

* See Economic Burden of Bladder Cancer Across the European Union, Leal et al (European Urology, 2016)
<https://www.sciencedirect.com/science/article/pii/S0302283815010052>. For US statistics see: <https://www.cancer.net/cancer-types/bladder-cancer/statistics>
** see figures at: <https://www.nature.com/articles/s41598-017-04083-z/tables/2>
*** <https://www.ncbi.nlm.nih.gov/pubmed/22925575>

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