Medical Xpress

Viagra does something very important—but it is unlikely to cause melanoma, researchers conclude

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A rigorous analysis of more than 20,000 medical records concludes that erectile dysfunction drugs, such as Viagra, are not a cause of melanoma, an often deadly form of skin cancer, despite the higher risk for the disease among users of these drugs. A detailed report on the research findings is to be published in the *Journal of the American Medical Association* online June 23.

The analysis, led by researchers at NYU Langone Medical Center and its Laura and Isaac Perlmutter Cancer Center, of medical records for some 20,235 mostly white men suggests instead that the likely source of the observed uptick in malignant melanoma risk among users of erectile dysfunction drugs is socioeconomic and lifestyle based.

"What our study results show is that groups of men who are more likely to get malignant melanoma include those with higher disposable incomes and education—men who likely can also afford more vacations in the sun—and who also have the means to buy erectile dysfunction medications, which are very expensive," says lead study investigator and NYU Langone urologist Stacy Loeb, MD, MSc.

"While medications for erectile dysfunction come with serious risk of a drop in blood pressure if taken together with other medicines called nitrates, overall they are safe medications, and our results suggest that physicians should not be concerned that the drugs cause melanoma," says Loeb, an assistant professor at NYU Langone and member of its Perlmutter Cancer Center.

"Physicians should still screen men for melanoma risk, but they do not need to add use of erectile dysfunction drugs to their list of screening criteria," says Loeb, whose latest study was prompted by a highly cited 2014 analysis in 14 men who had taken Viagra and were later diagnosed with melanoma.

Among the more than 20,000 men whose records were studied, 4,065 were found to have malignant melanoma between 2006 and 2012. Among these men were 2,148 who had used any of the three main drugs for erectile dysfunction—Viagra (also known as sildenafil), Levitra (vardenafil), and Cialis (tadalafil)—and among them, some 435 had the skin cancer.

Researchers who led the analysis say that while there was a greater statistical risk of developing malignant melanoma among erectile dysfunction drug users (an overall increased risk of 21 percent for having filled a single prescription), a closer look at the numbers revealed no increased risk among those men with the most prescriptions. Researchers say that a "dose relationship"—i.e., the more drugs taken

the higher the risk—would usually be expected if the drugs were a direct cause of the cancer.

The NYU Langone team and their colleagues in Sweden also found no correlation between the more advanced stages of the disease and drug usage. The only detected association was between any use of the drugs and the earliest stages of melanoma, further weakening the idea that the drugs were behind the overall observed increase in risk.

Moreover, researchers say their calculations of statistical risk would have been expected to be different for other types of skin cancer if the drugs—known collectively as phosphodiesterase type-5 inhibitors, or PDE5i for short—actually caused the disease. Instead, researchers found almost the same increased risk for another type of skin cancer, basal cell carcinoma (19 percent higher risk), which is linked to different biological pathways than the shared pathway involved in PDE5i use and malignant melanoma.

"When used appropriately, erectile dysfunction medications are very effective and improve the quality of life for many men, so men should know it is doubtful that taking these medications puts them at greater risk of getting skin cancer," says Loeb, who encourages her male patients to always practice skin cancer prevention by minimizing their exposure to the sun.

For the study, researchers matched and analyzed the medical records of men whose care was being monitored by the National Melanoma Register and the Prescribed Drug Register in Sweden, one of the few countries in the world taking a population-wide approach to battling melanoma and other types of cancer, and for which no comparable North American data source exists.

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