PROSTATE CANCER

Metformin—the new wonder drug?

New data suggest that use of metformin, but not other oral hypoglycaemics, decreases the risk of prostate cancer. In a nested case–control study of men living in Denmark from 1989 to 2011, metformin users were approximately 16% less likely to be diagnosed with prostate cancer than nonusers, even after adjustment for diabetic severity and other confounders.

Previous studies have shown that metformin has antiproliferative effects in preclinical models of prostate cancer and reduces prostate-cancer-specific and all-cause mortality in men with this disease; however, no randomized trial has evaluated the effect of metformin on prostate cancer risk, and observational studies have yielded conflicting results.

In this latest study, Preston *et al.* identified 12,226 cases of prostate cancer from the Danish Cancer Registry and the Aarhus University Prescription Database and used risk-set sampling to select 10 population controls per case ($n = 122,260$) from a group of men who were alive on the index date and born in the same year.

Metformin users were at decreased risk of prostate cancer compared with never-users (adjusted OR [aOR]: 0.84), whereas diabetics on no medication or on other oral hypoglycaemics did not have a reduced risk of prostate cancer (aOR for both: 0.98). The team also observed an inverse relationship between prostate cancer risk and the duration, intensity of use (number of pills per day in quartiles), and cumulative dose of metformin.

Interestingly, a stage-stratified subanalysis suggested that metformin use was associated with a reduced risk of localized cancer (aOR: 0.70) but not regional or distant metastatic disease, perhaps suggesting that metformin has a lesser effect on advanced disease.

So, given its known favourable safety profile, should we perhaps be giving metformin to men at risk of developing prostate cancer or encouraging diabetics to change medications? “Although several epidemiological and basic science studies show very promising results of metformin use in prostate cancer, it is premature to

suggest metformin for chemoprevention or modification of diabetic prescribing practices,” says Mark Preston, who led the research. “Well-designed randomized trials are needed to thoroughly assess its clinical benefit in prostate cancer.” In terms of the next steps for this work, the authors propose a randomized trial of metformin for chemoprevention among diabetic patients.

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