AUA 2018: BMI, But Not Exercise, Linked to Higher Risk of Aggressive Prostate Cancer

Aggressive PC risk on a par for “fat but fit” and “fat but unfit” men

May 18, 2018—San Francisco, California—Both exercise and body mass index (BMI) are modifiable risk factors for aggressive prostate cancer (PC), but it is unclear whether they interact to affect PC risk. New research presented at the 2018 Annual Meeting of the American Urological Association (AUA), which took place here from May 18–21, suggests that exercise does not offset the increased risk of aggressive PC.

The results for the study, *Is There Such Thing as Fat and Fit When It Comes to Prostate Cancer Risk? Interplay Between BMI, Exercise, and Prostate Cancer Risk*, were presented by Stephen Freedland, MD, Director of the Center for Integrated Research in Cancer and Lifestyle, Co-Director of the Cancer Genetics and Prevention Program, and Associate Director of Faculty Development at Cedars-Sinai in Los Angeles.

“There ... [are] a lot of conflicting data regarding obesity, which seem to be correlated with more aggressive cancer, and the role of exercise in particular,” Dr. Freedland told Elsevier’s PracticeUpdate. “The concept of ‘fat but fit’—is that really okay?”

Freedland and a research team from the Durham VA Health Care System, led by Jamie Michael, conducted a case-control study of men (n = 660) undergoing prostate biopsy at the Durham VA from January 2007 to May 2017. Subjects completed the Godin Leisure-Time Exercise Questionnaire, and their exercise for the 4 weeks prior to biopsy was recorded in terms of metabolic equivalent (MET) hours, weighted by intensity (eg, light = 3 MET, moderate = 5 MET, vigorous = 9 MET) and defined as total exercise sessions per week multiplied by average duration.

The investigators used logistic regression to test the link between BMI (defined as <25 normal, 25–30 overweight, >30 obese) and PC diagnosis. They used multinomial regression to test the link between BMI and high-grade (Gleason 7–10) and low-grade (Gleason 2–6) cancer versus no cancer. Likewise, they used similar analyses to test the link between MET hours per week (hr/wk.) and prostate cancer risk stratified by BMI. Analysis was performed for the entire cohort and stratified by BMI groups. Similarly, the link between BMI and PC risk and aggressive PC was tested overall and stratified by exercise groups (MET hr/wk <3, 3–8.9, 9–17.9, ≥18). *P* values for trend were calculated across MET groups by linear contrasts.

Results were adjusted for clinicodemographic features: age, race, digital rectal exam results, family history, volume measured by transrectal ultrasonography, and prostate-specific antigen level at biopsy.

The largest exercise group (45% of subjects) was the least active, registering less than 3 MET hours per week, and Dr. Freedland noted, “Plenty of men said they never exercised.” The next largest group, 27% of subjects, did ≥18 MET hours per week. In the remaining groups, 15% did 3 to 8.9 MET hours per week and 13% did 9 to 17.9 hours per week. There was no difference in the amount of exercise across BMI groups (*P* = .21).
Within the study population, 170 subjects had low-grade PC and 164 had high-grade PC. Regardless of how exercise was coded, investigators found no link between exercise and PC or aggressive PC in the entire cohort; there was also no link across BMI groups. There was no link between BMI and overall PC, although higher BMI was linked with increased high-grade PC (OR 1.06, \( P = .01 \)). All exercise groups showed a trend for higher BMI and higher risk of high-grade PC; however, with reduced power after stratification, it was not always significant (OR 1.04–1.11, \( P = .04–.28 \)). There were no interactions between exercise and BMI in predicting PC risk or aggressive PC.

“Ultimately, getting the weight off seems to be very, very important,” said Dr. Freedland. “Patients who are going to the gym and exercising—that’s great, but they still need to lose weight if they’re overweight.”

Dr. Freedland emphasized that these study results are limited and are a call for others to look into the issue. “By looking at one snapshot in time we may be missing some very interesting observations.”