Weight change, obesity and risk of prostate cancer progression among men with clinically localized prostate cancer.

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Obesity is associated with an increased risk of fatal prostate cancer. We aimed to elucidate the importance and relevant timing of obesity and weight change for prostate cancer progression. We identified 5,158 men diagnosed with localized prostate cancer (clinical stage T1/T2) from 1986 to 2012 in the Health Professionals Follow-up Study. Men were followed for biochemical recurrence and lethal prostate cancer (development of distant metastasis or prostate cancer-specific mortality) until 2012. Cox regression estimated hazard ratios (HRs) for body mass index (BMI) at age 21, BMI at diagnosis, "long-term" weight change from age 21 to diagnosis and "short-term" weight change over spans of 4 and 8 years preceding diagnosis. Because weight, weight change and mortality are strongly associated with smoking, we repeated analyses among never smokers only (N = 2,559). Among all patients, neither weight change nor BMI (at age 21 or at diagnosis) was associated with lethal prostate cancer. Among never smokers, long-term weight gain was associated with an increased risk of lethal disease (HR for gaining >30 pounds vs. stable weight [±10 pounds] 1.59, 95% CI, 1.01-2.50, p-trend = 0.06). Associations between weight change, BMI and lethal prostate cancer were stronger for men with BMI ≥ 25 at age 21 compared to those with BMI < 25. Weight change and obesity were not associated with an increased risk of biochemical recurrence. Our findings among never smoker men diagnosed with localized prostate cancer suggest a positive association between long-term weight gain and risk of lethal prostate cancer. Metabolic changes associated with weight gain may promote prostate cancer progression.

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