

Title: The Impact of Androgen Deprivation on One-year Mortality In a Large Prostate Cancer Registry with Cardiovascular Risk Factors

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Introduction:

Contemporary management of prostate cancer, including androgen deprivation therapy (ADT), has led to improved cancer survival and a shift of focus to non-cancer related mortality of which ischemic heart disease is the most common. The FDA recently cautioned that ADT may increase the risk of cardiovascular disease (CVD) although it is not clear the relative contribution of ADT compared to baseline CVD risk factors to CV events.

Methods:

The Vanderbilt Tumor Registry identified all newly diagnosed prostate cancer patients. These cases were linked to the Vanderbilt Synthetic Derivative, a de-identified clinical database of over 2.5 million patients, to obtain baseline CVD and CV risk factors. Chi-square test was used to evaluate if mortality rate was higher in those receiving ADT. A hierarchical multivariable regression model incorporating demographics, prostatectomy status, tumor stage, CVD (stroke, CAD, heart failure) and CV risk factors examined the association between ADT and mortality.

Results:

Among 9869 patients with prostate cancer, 1218 were prescribed ADT. There were 63 deaths in the ADT group (5%) and 97 in the comparator group (1%). Risk of 1-year all-cause mortality was significantly increased among those receiving ADT versus those who did not (estimate 4.8, 95% CI: 3.5-6.6; $p < 0.0001$). After adjusting for age, ethnicity, tumor stage, prostatectomy treatment, stroke, CAD, heart failure, HTN, dyslipidemia, diabetes, and the use of cardiac medications, there remained a significant effect of ADT exposure and 1-year mortality (coefficient 0.05, 95% CI: 0.03-0.08 $p < 0.0001$). Important risk factors associated with ADT and mortality such as smoking status, lipids, and BMI were inadequately ascertained.

Conclusions:

ADT is associated with increased risk of 1-year all-cause mortality, which persists after controlling for CVD and CV risk factors. Future prospective studies should further explore this relationship.

Predictors of 1-year Mortality, Fully Adjusted Model

