

## CASE REPORT

## Enzalutamide induced non-ischemic cardiomyopathy. A case report and review of literature on anti-androgen therapy-related cardiovascular events

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Prostate cancer has a very high prevalence among elder men, and this could potentially increase as longevity in many parts of the world is increasing. Early stages of prostate cancer can have surgical options, but the more advanced stages require some form of anti-androgen therapy. There are novel anti-androgen agents that were recently approved. Cardiovascular toxicity has been reported with some of these drugs. This is a novel report of likely cardiovascular toxicity due to Enzalutamide, which typically has a safer cardiovascular profile than Abiraterone.

We describe a 72-year-old male with repeated recurrence of prostate cancer with metastasis. The second time it recurred was within 2 years of the 1st recurrence and was treated with Enzalutamide.

However, within 2 weeks he developed systolic congestive heart failure that improved with stopping the drug and medical optimization.

Literature review shows that Abiraterone has more cardiovascular side effects than Enzalutamide which more commonly causes hypertension. The timeline in our case suggests Enzalutamide causing congestive heart failure which is a novel finding. This finding warrants further research regarding the safety profile of novel anti-androgen therapy. This includes risk stratification for potential cardiovascular adverse events and risk/benefit analysis prior to initiating therapy. Data on cumulative dose accumulation and risks can also be an area of future research.

**Keywords** Enzalutamide, Prostate cancer, Cardiomyopathy, Hypertension

**Background**

Prostate cancer is the most common cancer in men in the United States [1], with an average age at diagnosis of 66 and more likely to develop in older and non-Hispanic Black men [2]. Androgen deprivation therapy (ADT) is the primary treatment modality for locally advanced and metastatic prostate cancer. Cardiovascular risk and mortality incidence are higher in patients treated with Gonadotropin releasing hormone (GnRH) analogs. Adding novel agents such as Enzalutamide and Abiraterone to the treatment regimen further increases cardiovascular risk. Enzalutamide and Abiraterone are both

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