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### Background

Developing novel chemotherapy drugs is time consuming and expensive. To compensate for this expense, drug manufacturers attempt to expand the drug indications by conducting clinical trials. The findings from our study are anticipated to provide valuable insights into the drug development journey of enzalutamide (XTANDI) that will further inform healthcare professionals, researchers, and policymakers regarding its effectiveness, safety profile, and implications for cancer treatment.

### Methods

- On May 25<sup>th</sup>, 2023 we conducted a search of Pubmed, Embase, Cochrane CENTRAL, and ClinicalTrials.gov for clinical trials of enzalutamide in the treatment of solid tumors.
- Per our inclusion criteria, we selected trials using RECIST criteria, published in English, included adult participants, and treated solid tumors.
- We compiled, PSA response, median progression-free survival (PFS) and overall survival (OS) in months, adverse events and objective response for each trial. The results of the study were positive, negative or indeterminate based on trial predetermined primary endpoints and tolerability.

### Results

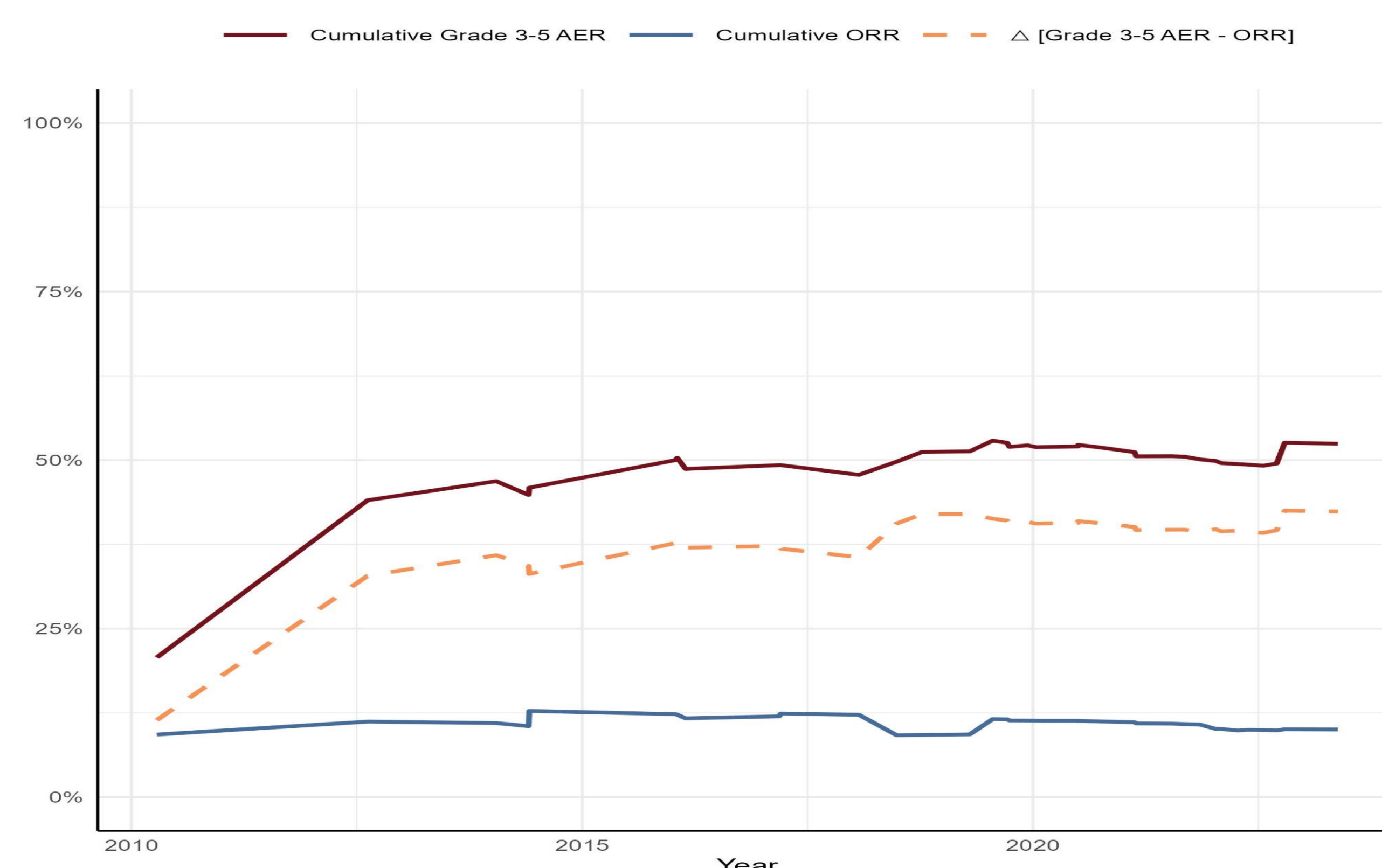


Figure 1: Average adverse event rates (AER) per trial-year vs. average ORR per trial-year plotted over time. Δ[AER-ORR] is the absolute difference between cumulative AER and cumulative ORR.

- Enzalutamide, approved for treating prostate cancer in 2012, has since undergone trials in 5 off-label indications.
- Following its approval, enzalutamide has been attributed to 4,733 grade 3-5 adverse events in 9,475 patients.
- It has shown a positive profile and moderate objective response (12.9%) in FDA approved indications.
- However, when comparing enzalutamide's impact on other histologies, a similar profile exists, with lacking ability to produce significant benefits in PFS, OS, or objective response.

### Discussion

Despite positive outcomes in trials outside of enzalutamide's primary indication, little evidence exists to support the benefit or efficacy of its use in alternative histologies. Furthermore, given that enzalutamide has shown the propensity to cause adverse events, physicians should consider the risk-to-benefit profile of enzalutamide before recommending treatment.

### References



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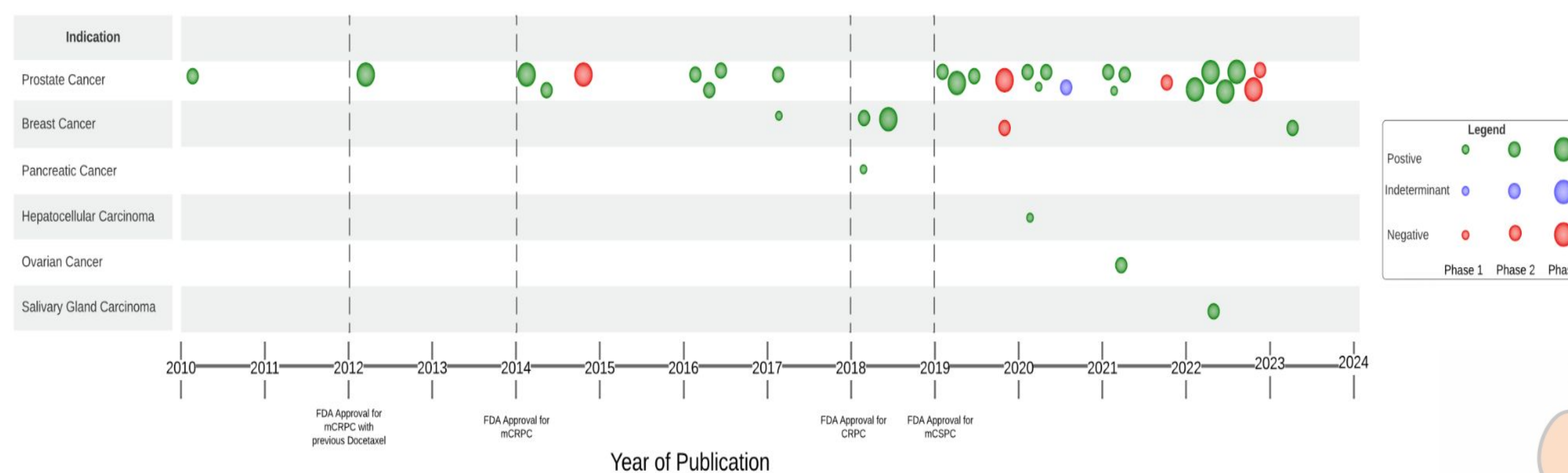


Figure 2: Accumulating Evidence and Research Organization (AERO) for enzalutamide trials.



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