

# Prostate Cancer Clinical Trials: Understanding Terminations, Risk Factors, and Future Prospects

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**Introduction:** The management of prostate cancer have significantly evolved over time, primarily due to advancements in understanding disease biology, and use of novel medications. However, the introduction of new treatment modalities requires extensive testing, including rigorous clinical trials, which demand substantial financial resources and effort. Furthermore, like any other study, there is a risk of termination. In this study, we aim to the factors associated with prostate cancer clinical trial termination.

**Methodology:** A comprehensive cross-sectional search of ClinicalTrials.gov was conducted to identify completed clinical trials for the treatment of prostate cancer from 2000 to 2020. The NCT identifier was utilized to determine whether each trial was completed or terminated. Subsequently, the identified NCT numbers were used to search PubMed to determine if the trials were published. These trials were further assessed to identify factors that contributed to termination. Univariable and multivariable analyses were then performed to identify significant factors associated with termination.

**Results:** A total of 643 prostate cancer clinical trials were identified, of which 23% were terminated. The most common reason for termination was low accrual, accounting for 47.4% of cases, followed by concerns about patient safety at 23.4%. On univariable analysis, there was a significant association between clinical trial termination and factors such as university funding, non-masking, the number of centers involved, and a higher number of patients. On multivariable analysis, only the funding sources and the number of participants in the clinical trials were stay positive as privately funded trials and trials with more than 50 participants were significantly associated with a lower risk of termination, with odd ratio (OR) of 0.37 (95%CI: 0.20-0.70) and 0.17 (95%CI: 0.11-0.25) respectively, and p-values of 0.002 and <0.001 respectively.

**Conclusion:** Our findings indicate that approximately one quadrant of prostate clinical trials was terminated, with low accrual being the predominant reason. Moreover, we observed significantly lower odds of termination in trials with private funding and clinical trials that has more than 50 participant. The results from this study might help to inform different stake holders to prioritize funding and resources allocation to more increase the number of participant and support private institution to fund more clinical trials sequentially decreasing the termination rate of the clinical trial.