PRAZOSIN USED TO MANAGE LUTS IN MEN WITH PROSTATE CANCER REDUCES RISK OF BIOCHEMICAL RELAPSE FOLLOWING RADIOTHEAPY

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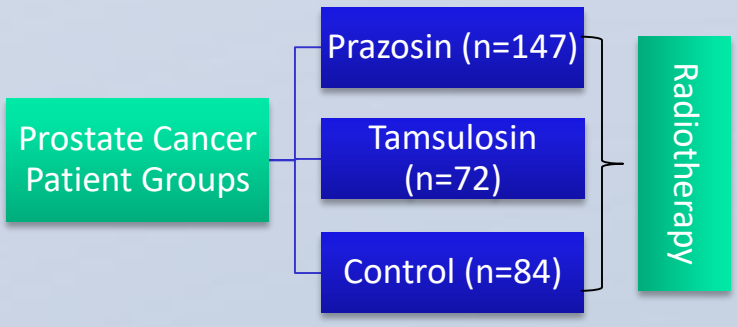
BACKGROUND

Alpha1-adrenceptor antagonists are commonly used to manage acute lower urinary tract symptoms (LUTS) experienced by men receiving radiotherapy for localised prostate cancer (1).

There is evidence that some alpha-blockers, such as prazosin, reduce the incidence of prostate cancer and increase apoptosis in the prostate (2). Several in vitro studies have also demonstrated cytotoxic actions of quinazoline a_1-ADR antagonists in prostate cancer cell lines, an effects that is independent of alpha-adrenoceotor blockade (3). These cytotoxic actions are not observed with the non-quinazoline antagonist tamsulosin. The potential dual LUTS and anti-cancer actions of these antagonists may be particularly beneficial in men treated with radiotherapy for localised prostate cancer.

METHODS

We retrospectively evaluated data from 303 men with histologically proven adenocarcinoma of the prostate who received radiotherapy between 1998 and 2017.



PSA values were recorded periodically from diagnosis up to 120 months (10 years) if available. Three primary outcomes were evaluated including relapse rates (%) at two and five years, time to biochemical relapse (months) and PSA velocity (ng/mL/year). Recurrence free survival (%) was also calculated using Kaplan Meier curves.

AIM

To determine if the quinazoline a_1-ADR antagonist prostate cancer patients who have received radiotherapy as part of theirprazosin and the non-quinazoline a_1-ADR antagonist tamsulosin delay time to biochemical relapse and influence radiosensitivity in treatment regimen.

RESULTS

The number of prostate cancer patients who experienced biochemical relapse at both the two and five-year points was significant lower in the prazosin group when compared to the control and tamsulosin groups **(Table 1).**

Relapse (%)	Control	Tamsulosin	Prazosin
2 years	22.6% (n=19)	15.2% (n=11)	2.7% (n=4)**
5 years	34.5% (n=29)	25.0% (n=18)	8.8% (n=13)**

Table 1: *Two & five year percentage relapse rates in control, tamsulosin and prazosin patient groups treated with radiotherapy.*

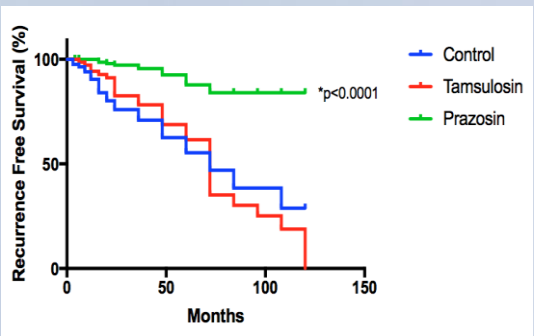


Figure 2: *Kaplan Meier plot of recurrence free survival (%) in control, tamsulosin and prazosin treatment groups for a period of 120 months (10 years)*

Kaplan-Meier survival analysis demonstrated that the recurrence free survival was higher in the prazosin group and median survival was significantly extended **(Figure 2).**

Prazosin patients have a 3.9 times lower relative risk of biochemical relapse when compared to control. Difference in time to biochemical relapse was not significant altered by prazosin or tamsulosin (p=0.1258), despite this the use of tamsulosin and prazosin extended recurrence free survival by 13.15 and 9.21 months respectively.

Prazosin patients had a much lower PSA velocity (0.306ng/mL/year) when compared to the control (2.980ng/mL/year) and tamsulosin (3.363ng/mL/year) groups.

CONCLUSIONS

The use of prazosin to manage LUTS in men with prostate cancer may also improve treatment outcomes by reducing the risk of biochemical relapse. This was not true of the non-quinazoline tamsulosin. To our knowledge, this is the first study to provide an argument for the use prazosin in the treatment of prostate cancer as an adjunct treatment option.

REFERENCES

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