

## **The effect of Metformin and Statin in Men with Biochemically Recurrent Prostate Cancer (BCRPC) – A single-centre retrospective study**

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**Background:** Androgen deprivation therapy (ADT) remains the mainstay of treatment for men with biochemical relapse after definitive treatment where no further local therapy is appropriate. The timing of initiation is critical as it impacts on quality of life and is associated with increased non-prostate cancer mortality. Metformin and statin are commonly used medications with well-known safety profiles which have been shown to be active in prostate cancer in pre-clinical and observational studies. This study aims to determine the clinical efficacy of these medications in the treatment of BCRPC.

**Methods:** This is a single-centre retrospective review of men who received metformin and/or statin during their BCRPC between January 2016 and June 2019. De-identified demographic and clinical information were obtained through review of their electronic medical records.

**Results:** A total of 31 patients were included. Most treatments were initiated due to patients' desire to delay/avoid ADT initiation. The median age is 72 years, with the majority (75%) having received radical prostatectomy and salvage radiotherapy as their definitive treatment. Existing history of diabetes mellitus and hypercholesterolaemia was present in 6.5% and 22.6% of patients respectively. Twenty-seven patients received both metformin and statin. PSA response  $\leq 30\%$  baseline was observed in five (16%) patients. Median duration on treatment was 8 months. PSA rise was significantly slower on treatment with mean PSA doubling time of 8.6 months pre-treatment (95% CI 5.3-11.8) compared to 26.8 months (95% CI 13.5-40.1) on treatment ( $p=0.001$ ). Treatment was well tolerated with grade 1 diarrhoea being the most common adverse effect.

**Conclusions:** Metformin/statin significantly attenuates the PSA kinetic in men with BCRPC which may allow delay in the initiation of ADT and its associated adverse effects. A prospective study is needed to further investigate the clinical efficacy of this combination and biomarkers to predict response.

**Conflict of Interest:** Nil

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