



Metformin is Beneficial in DM2 Patients with Prostate Cancer

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Opinion

Two years ago we became aware of the use of metformin as adjuvant therapy in breast cancer. We were curious to see if the metformin was effective in male prostate cancer, in some sense an endocrinologic equivalent of breast cancer in men. In a retrospective chart review, Prostate cancer patients with DM 2 were identified in the electronic record system of the VA (CPRS). One group had control of their Diabetes with standard therapy and no metformin and a matched group had control of their Diabetes with standard therapy plus metformin. We examined the final PSA values, number of recurrences, metastases and number living for each group. There were significantly fewer deaths (-13%), recurrences (-7%), metastases (5% for control, 0% for metformin) and fewer secondary cancers (-11%), with a $p < 0.004$ cumulative value for all cancer related issues. PSA was lower in the metformin group, with a p value approaching significance. We believe

these significant effects involve metformin's ability to activate AMPK, a kinase, which inhibits mTOR. AMPK is an energy signaling molecule and it and mTOR, regulating cell growth are found in many cancers including prostate. In addition, metformin activates several tumor suppressor genes including the well-known p53 gene. Many of the signaling pathways that make metformin very useful in DM 2 appear also to be involved in cancer "signaling". We believe metformin works to enhance cytotoxic effects of other traditional chemotherapy. Because this is a retrospective study, we believe a prospective double blind clinical trial will be needed to confirm our preliminary findings [1,2].

References

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2. Chong RW, Vasudevan V, Zuber J, Solomon S (2016) Metformin has a positive Therapeutic effect on prostate cancer in Diabetes Mellitus 2 patients.

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