

Effect of Prednisone Dosing on Mineralocorticoid Related Side Effects with Abiraterone in Prostate Cancer

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Purpose: Abiraterone use for prostate cancer can cause mineralocorticoid excess syndrome (MES; eg, hypertension and hypokalemia). Prednisone mitigates these effects; however, the optimal dose level is unclear. This study examines MES effects from abiraterone with 5 mg of prednisone once daily versus 5 mg twice daily.

Methods: Data for 1,410 abiraterone-treated patients from 2011 to 2022 were identified from a large academic/community hospital system. Three hundred and fifty-three patients were excluded for missing medication data and use of an alternative steroid; 1,057 patients remained (5 mg once daily, n = 550, 5 mg twice daily, n = 507). Prednisone dose was treated as a time-varying covariate. Hypokalemia and hypertension incidence over 24 weeks after abiraterone initiation was analyzed via Cox proportional hazard models using Common Terminology Criteria for Adverse Events (v5.0) grading via direct clinical measurements and International Classification of Diseases (ICD)-10 code outcomes.

Results: Patients receiving 5 mg of prednisone twice daily had a statistically significant decrease in cumulative hazard for experiencing at least one MES event (hypertension and/or hypokalemia) via direct clinical measurement (hazard ratio [HR], 0.79 [CI, 0.68 to 0.91]; $P = .002$) and by ICD-10 code (HR, 0.65 [CI, 0.54 to 0.79]; $P < .001$) analysis. This finding was durable with individual end point analysis of hypertension and hypokalemia. There were no changes to BMI or hyperglycemia (>140 mg/dL) between the cohorts.

Conclusion: This retrospective analysis shows a decrease in risk for the development of at least one episode of hypertension or hypokalemia with abiraterone using 5 mg twice-daily prednisone in the study population. Assessments of metabolic impacts (BMI, hyperglycemia) did not show differences with prednisone dosing. These findings may merit consideration when determining an optimal prednisone dosing regimen.