Background: Abiraterone strongly inhibits androgen synthesis but may lead to an increase in mineralocorticoid hormones that may impair its long term tolerability in patients with prostate cancer. At present, the best conceivable treatment for managing the abiraterone-induced mineralocorticoid excess consists of the administration of glucocorticoid replacement at the lowest effective dose and salt deprivation. The drug dose should be modulated by monitoring blood pressure, fluid retention and potassium levels during therapy.

Materials and methods: We evaluated prospectively phosphorus, calcium and potassium serum levels in 28 metastatic prostate cancer patients receiving abiraterone in pre and postchemotherapy setting. 10 out of 28 received zoledronic acid and calcium supplement as concomitant medication. Biochemical assessment was performed before receiving the first dose of abiraterone and every first day of every cycle.

Results: All patients had potassium serum level within normal limits. Hypocalcemia G1 was present in 10% of patients not receiving zoledronic acid. 25% of patients (7/28) showed phosphate serum-low level G3. In these patients we decided to administer a daily supplement of oral phosphorus with the resolution of the adverse event within 28 days in 6 out of 7 patients.

Conclusions: To our knowledge there are no data reporting hypophosphatemia on abiraterone therapy. Patients with metastatic prostate cancer often showed anorexia, fatigue, confusion, anxiety, musculoskeletal pain, tremors. These symptoms could be related to malignancy or advanced age, owing to a combination of several factors. Severe hypophosphatemia cause the same symptomatology. Mild phosphate serum-low level does not require any treatment. However it is important that we identify the presence of moderate or severe hypophosphatemia because a rapid supplementation can result in a better tolerance of abiraterone and a better outcome of these patients.