Olaparib in metastatic castration-resistant prostate cancer with BRCA2 mutation

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DISCLOSURE OF INTEREST

- No conflicts of interest
Case Presentation

45-year-old male, ECOG PS 0, commercial director of a company, smoker

- **Family history**
  - Mother died at 38 with breast cancer (diagnosed at 33)
  - Father has lung cancer
  - Maternal grandfather died in his 80s and had lung cancer a few years before
  - Maternal aunt died at age 57 with metastasis of unidentified primary carcinoma
  - Cousin (paternal uncle's daughter) had breast cancer at age 45

Since early 2016

**Cervical and low back pain. PSA 352 ng/mL**

Prostate biopsy: acinar adenocarcinoma Gleason score 8 (4+4). Perineural invasion positive

- **TAP CT scan**: "enlarged prostate, irregular contours and heterogeneous density, which induces compression on the bladder. Bone metastasis in the iliac, sacrum and some lumbar and possibly dorsal vertebral bodies, as well as in the right humerus"

- **Bone scan**: “disseminated bone metastasis”
Case Presentation

August 2016

- Bicalutamide 50 mg/day and a quarterly injection of goserelin 10.8 mg
- Treatment with bisphosphonates and chemotherapy combined with hormone therapy, according to STAMPEDE and CHAARTED studies, was proposed after presentation in the multidisciplinary group meeting.

September to December 2016

- Docetaxel 75 mg/m2 every 3 weeks + oral prednisolone and zoledronic acid
- PSA nadir of 317 ng/mL was in the 3rd cycle
- Docetaxel was discontinued after 5 cycles due to progression
- PSA progression: 580 ng/mL in December 2016

January 2017

- Hospitalized due to spinal cord compression. Emergent D6–D8 laminectomy
- Spine MRI: “Signs of diffuse secondary infiltration in all sacro-back-lumbar vertebrae, sacral / iliac wings, and ribs. In layout D6, D7 and D8, posterior predominantly epidural tissue component, with lateral extension, which compresses and deviates the spinal cord”
At the multidisciplinary group meeting, paliative radiotherapy was proposed to be performed on the dorsal spine and later restart chemotherapy treatment.

**Rehabilitation program**

**Radiotherapy to D5-D9 and L4-S2 (20 Gy/5 Fr daily)**

**BRCA2 gene mutation positive test**

Authorization for Olaparib was requested to the National Medicine Authority

**Dose-reduction Carboplatin** (while awaiting authorization for Olaparib)

- PSA decreased to 97 ng/mL, at the time that carboplatin began, which coincided with the postoperative period.

**June 2017**

- Brain MRI: “multifocal lesions affecting the skull cap and base” with preferential involvement of the sphenoid body, conditioning thickening of the left cavernous sinus, surrounding the internal carotid artery and invading the turkish saddle, deforming the pituitary gland, and also creeping into the middle cranial fossa, shaping the temporal parenchyma.
Due to lack of authorization, it was decided at the multidisciplinary group meeting to start Enzalutamide and holocranial radiotherapy.

**Enzalutamide 160 mg/daily**

**Holocranial radiotherapy (30 Gy/10 Fr daily)**

Due to anemia and thrombocytopenia, it was necessary to reduce the dose of Olaparib.

**Olaparib 400 mg twice daily**

Due to worsening anemia and progression of the disease:

**Olaparib suspended**

Best Supportive Care

PSA rose to 2008 ng/mL

Patient is hospitalized for worsening clinical condition, ending up dying
Discussion

- Would this patient have indication to do the genetic study?
- Was the use of carboplatin after progression with docetaxel an appropriate decision?
- Was the choice of enzalutamide with third line treatment the right one?
- When could cabazitaxel have been used?
- Is the use of olaparib indicated? Would the response have been longer if it had been started earlier?
Thank you for your attention!