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Guest Editorial

Some Considerations about Neuroendocrine Prostate Cancer in Latin-American Patients

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Prostate cancer represents a health problem in African-American men. It is one of the leading causes of incidence and mortality from solid tumors in adult men. The appearance of the undifferentiated pattern, specifically the neuroendocrine variant, constitutes a challenge for the diagnosis and control of the disease in Uro-oncology units of the Latin-Americans hospitals. It is common in younger ages (under 65 years) and in African American descendants with atypical clinical behavior of the disease. Genetic differences are showed in different studies between Afro-American o Caucasian men postulated to contribute to these disparities [1].

Neuroendocrine prostate cancer (NEPC) may arise de novo or in patients previously treated with hormonal therapies. Only around 1% are diagnosed de novo, but close to 10% in cases of resistance to castration or progression disease.

For several investigators, the identification of the clinical, biochemical and histopathological characteristics of NEPC is necessary above all to adapt the treatment. Clinical features are poorly defined, may be suspected in patients who develop rapidly progressive disease, unusual sites or pattern of metastases and/or progression in the setting of a low or modestly rising PSA. Histologically, it is characterized by the presence of small and hyperchromatic cells with high nuclear to cytoplasmic ratio [2,3].

Undifferentiated tumors of the prostate cancer have been classified into some variety: usual prostate adenocarcinoma with neuroendocrine differentiation; adenocarcinoma with Paneth cell neuroendocrine differentiation; prostate carcinoid tumor; small cell carcinoma; large cell neuroendocrine carcinoma; and mixed neuroendocrine carcinoma - acinar adenocarcinoma [4].

NEPC, in all the histological type, have a median survival of close to 16 months. This subgroup of tumors with an aggressive pattern is in turn very heterogeneous in its behavior, which indicates the need for its molecular characterization [3,4].

For some investigator in cases of transformed NEPC, in addition to monitoring PSA, clinicians should monitor some biomarkers, such as chromogranin A (CgA), neuron-specific enolase (NSE), lactate dehydrogenase (LDH), carcinoembryonic antigen (CEA) and circulating tumors cells (CTCs) [3,4].

In the histopathology diagnosis is necessary the immunohistochemistry, it is sometimes difficult to determine the presence of prostate Adenocarcinoma in man with normal serological PSA tests, it does not usually mark the specific markers of prostate cancer: prostate specific antigen (PSA) or acid phosphatase, so a panel of neural markers must be performed 90-100% positive: chromogranin A, synaptophysin and CD34; bombesin protein expression cold be positive too in 88%. All them can help to do it the diagnosis of neuroendocrine variety [4,5].

In its molecular characterization, alterations are described in more than 70% related to its independent development of the androgen receptor (AR), a loss of the PSA, AR and P501s proteins has been evidenced, all this associated with a panel of tumor suppressor genes with loss of alleles of the proteins PTEN, RB1 and Tp53 [4-6].

Treatment of neuroendocrine carcinomas of the prostate

In general, these patients have a very poor response to the recommended treatments for localization, mainly in the scenario of resistance to castration with Abiraterone Acetate and Docetaxel, with which the main resistance investigations have been carried out.

There are indications for treatment in this small group of patients who are generally more sensitive to platinum salts, therefore other chemotherapy regimens other than Docetaxel are recommended with better clinical and biochemical response but without significant benefit on overall survival (OS) [6].

Drugs	Drugs dosage	Schedule	Schedule Frequency
Cisplatin	25 mg/m^2	Days 1,2,3	c/21 days
Etoposide	100 mg/m^2	Days 1,2,3	
Carboplatin	AUC 5	Day 1	c/21 days
Etoposide	100 mg/m^2	Days 1,2,3	
Carboplatino	AUC 5	Day 1	c/21 days
Docetaxel	75 mg/m^2	Day 1	
Cyclophosphamide	1000 mg/m^2	Day 1	c/21 days
Vincristine	2 mg	Day 1	
Adriamicyn	40 mg/m^2	Day 1	

Table 1: *Chemotherapy used in neuroendocrine adenocarcinoma of the prostate.*

Conclusion

It is important to identify the patient with neuroendocrine prostate cancer with clinical worse evolutions, specifically in young African-American men and Latin-American patients to adequate sequence staging studies, their risk factors related to the disease and individualize the treatment of them and to incorporate the risk family members into genetic advising.

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