Neuroendocrine differentiation in castration-resistant prostate cancer: a systematic diagnostic attempt.


Abstract

BACKGROUND: Assessing the neuroendocrine (NE) pattern in castration-resistant prostate cancer (CRPC) may prove useful in selecting potential responders to target therapies such as somatostatin analogues. The aim of this study was to define a panel of markers or examinations appropriate to characterize NE differentiation (NED).

METHODS: Forty-seven patients with CRPC underwent a systematic diagnostic attempt to characterize the NE phenotype using a plasma blood test for chromogranin A (CgA) and immunohistochemical staining of needle biopsy-obtained specimens (CgA, somatostatin receptor 2 [SSTR2], Ki-67, and androgen receptors). In a subgroup of 26 patients, somatostatin receptor scintigraphy using (111)In-DTPA-d-Phe octreotide (octreotide scintigraphy; Octreoscan, Covidien, Hazelwood, MO) was also performed.

RESULTS: NED was found in 85.1% of patients (if serum CgA, tissular CgA, and tissular SSTR2 were considered separately: 54%, 67%, and 58%, respectively). Only 15% of the 26-patient subgroup had an abnormal octreotide scintigraphy result. Although p-CgA and t-CgA were associated with more aggressive disease with a worse prognosis, patients with positive tissular SSTR2 staining had longer overall survival (OS).

CONCLUSION: This systematic approach to explore the NED in a quite homogeneous group of patients with CRPC seems reproducible and appropriate. Further investigations are required to validate this panel and better characterize potential responders to targeted therapy.

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