The presence and clinical implication of intraductal carcinoma of prostate in metastatic castration resistant prostate cancer.


Abstract

BACKGROUND: Intraductal carcinoma of prostate (IDC-P) is always underestimated pathological pattern in prostate cancer and its role is still unclear in castration resistant prostate cancer (CRPC). This study was conducted to investigate the presence and the roles of IDC-P in patients with metastatic CRPC.

METHODS: 45 patients with initially diagnosed metastatic prostate cancer and then progressed to CRPC, were included. All of them were received twice transperineal biopsies at the time of initial diagnosis and the time of CRPC. All samples were retrieved to detect the presence of IDC-P. PSA doubling time (PSADT) was considered as a parameter presenting the progression of CRPC. The relationships between IDC-P and other clinicopathological variables were analyzed.

RESULTS: IDC-P was found only in 20% (9/45) cases at initial diagnosis, whereas, it increased to 62.5% (28/45) at the time of CRPC ($\chi^2 = 16.568, P = 0.000$). Compared to acinar adenocarcinoma components in tumor tissues, IDC-P components, especially solid subtype, had obviously poor/no response to androgen deprivation therapy (ADT). In addition, among patients treated with docetaxel-based chemotherapy ($n = 24$), patients with IDC-P also showed more unfavorable response than those without IDC-P (20% vs. 66.7%, $P = 0.022$). The presence of IDC-P and serum testosterone at the time of CRPC, were significantly associated with rapid disease progression. 13/28 (46.4%) CRPC with IDC-P had PSADT less than 30 days, while, only 1/17 (5.9%) patient without IDC-P had a less than 30 days PSADT ($\chi^2 = 8.114, P = 0.004$). Limitations included the relative short follow-up time and a relative small cohort.

CONCLUSIONS: The presence of IDC-P was significantly associated with rapid progression of CRPC. And its presence could suggest the poor response to initial ADT and sequential docetaxel-based chemotherapy. Detection of IDC-P should be of importance in CRPC, and re-biopsy at the time of CRPC might be one of practical solutions. The mechanism of the ADT and docetaxel resistance to IDC-P needed to be further investigated.


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KEYWORDS: androgen deprivation therapy resistance; castration resistant prostate cancer; docetaxel resistance; intraductal carcinoma of prostate

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