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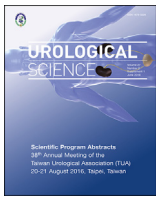

Podium

Podium-1
Oncology

PD1-1:
A NOVEL BIOMARKER FOR PROSTATE CANCER DETECTION IN PATIENT WITH GRAY ZONE PSA LEVEL

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Purpose: Prostate cancer screening with PSA is plagued by high rate of unnecessary prostate biopsies, especially in the "gray zone" (4.0ng/ml – 10.0ng/ml). We introduce a new circulating-tumor-cell (CTC) biomarker for detection of prostate cancer in patients in the PSA "gray zone" level, with the clinically verified potential to substantially decrease the number of unnecessary prostate biopsies.
Materials and Methods: A total of 97 patients underwent routine prostate screening including PSA testing and DRE. One tube of blood was drawn for each patient and sent for CTC analysis in a double blinded study. A subset of 23 patients with PSA in the 4.0ng/ml – 10.0ng/ml range was selected with consent to undergo prostate biopsy for comparison with blinded CTC test results. The CTC test utilized a microfluidic platform with EpCAM as capture antibody. Suspected CTCs were eluted to a membrane chip and immunofluorently stained with CK18, PSMA and CD45 antibody to confirm. Positive CTCs are defined as CK18+ or PSMA+ and CD45-.
Results: Prostate cancer was confirmed by biopsy in 60 out of 97 patients. CTC assay reported 83% of the cancer cases, demonstrating prostate cancer detection ability of the assay. In the subset category of 23 patients (PSA in the 4.0ng/ml – 10.0ng/ml range, and prostate biopsy), the CTC assay was able to detect cancer in 100% of the prostate cancer cases.
Conclusion: This CTC-based blood test is a valuable new tool in effective screening for prostate cancer. We have demonstrated that this new CTC biomarker is able to reduce unnecessary invasive prostate biopsies in the PSA "gray zone" by over 60%, with the potential to reduce cost to the system and reduce complication rates due to prostate biopsies, thus improving patient outcomes.

PD1-2:
OVEREXPRESSION OF PTP4A3 IS ASSOCIATED WITH METASTASIS AND UNFAVORABLE PROGNOSIS IN UROTHELIAL CARCINOMA

Hsin-Chih Yeh [1,2,3], Wen-Jeng Wu [1,2,3], Ching-Chia Li [1,2,3], Chun-Nung Huang [2], Hung-Lung Ke [2,3], Wei-Ming Li [2,3,4], Chien-Feng Li [5], Hsiang-Ying Lee [1,2,3]. [1] *Department of Urology, Kaohsiung Municipal Ta-Tung Hospital, Kaohsiung, Taiwan;* [2] *Department of Urology, Kaohsiung Medical University Hospital, Kaohsiung, Taiwan;* [3] *Graduate Institute of Medicine, College of Medicine, Kaohsiung Medical University, Kaohsiung, Taiwan;* [4] *Department of Urology, Ministry of Health and Welfare Pingtung Hospital, Pingtung, Taiwan;* [5] *Department of Pathology, Chi Mei Medical Center, Tainan, Taiwan*

Purpose: Urothelial carcinoma (UC) is the most common malignancy involving urinary bladder (UB) and upper urinary tract (UT) for which the theranostic markers remain under-investigated. Increasing evidence has shown that protein tyrosine phosphatases (PTPs) play dominant roles in setting the levels of tyrosine phosphorylation and promote oncogenic processes. However, their expression has not been systemically investigated in UC, and our aim is to examine their potential impact on UC.
Materials and Methods: We performed data mining from a published transcriptome of UBUCs (GSE32894), and *PTP type IVA member 3* (*PTP4A3*) was identified as the most significantly upregulated gene among those related to prenylated PTP activity (GO: 0004727). The importance of PTP4A3 was initially analyzed in paired normal urothelium, non-invasive UC, invasive UC, and nodal metastatic tissue. *PTP4A3* transcript level was assessed in snap-frozen UC samples by laser capture microdissection and real-time RT-PCR. PTP4A3 protein expression was determined by immunohistochemistry in 295 UBUCs and 340 UTUCs, respectively. The association of PTP4A3 expression with clinicopathological features, disease-specific survival (DSS), and metastasis-free survival (MeFS) was further evaluated.
Results: For both UBUC and UTUC, the level of PTP4A3 significantly increased from normal urothelium, non-invasive UC, invasive UC, to nodal metastatic tissue (both $p < 0.001$). The *PTP4A3* transcript level was also markedly upregulated in high stage UC (UBUC, $p < 0.001$; UTUC, $p = 0.002$). Overexpression of PTP4A3 protein was significantly associated with advanced pT status, nodal metastasis, and lymphovascular invasion (all $p < 0.001$). PTP4A3 overexpression not only predicted worse DSS and MeFS on univariate analysis (all $p < 0.001$), but also implicated in inferior DSS (UBUC, $p < 0.001$; UTUC, $p = 0.001$) and MeFS (UBUC, $p = 0.003$; UTUC, $p = 0.001$) on multivariate analysis.
Conclusion: PTP4A3 overexpression independently predicted metastasis and outcome of both UBUC and UTUC, suggesting its potential theranostic value in UC.

PD1-3:
THE PROGNOSTIC SIGNIFICANCE OF INFLAMMATION-ASSOCIATED BLOOD CELL MARKERS IN PATIENTS WITH UPPER TRACT UROTHELIAL CARCINOMA

Hsin-Chih Yeh [1,2,3], Wen-Jeng Wu [1,2,3], Ching-Chia Li [1,2,3], Chun-Nung Huang [2], Hung-Lung Ke [2,3], Wei-Ming Li [2,3,4], Hsiang-Ying Lee [1,2,3]. [1] *Department of Urology, Kaohsiung Municipal Ta-Tung Hospital, Kaohsiung, Taiwan;* [2] *Department of Urology, Kaohsiung Medical University Hospital, Kaohsiung, Taiwan;* [3] *Graduate Institute of Medicine, College of Medicine, Kaohsiung Medical University, Kaohsiung, Taiwan;* [4] *Department of Urology, Ministry of Health and Welfare Pingtung Hospital, Pingtung, Taiwan*

Purpose: Inflammation-related parameters based on blood cells, including white blood cell (WBC) count, neutrophil-lymphocyte ratio, platelet count, and red cell distribution width (RDW), have been shown to be associated with prognosis in many cancers. We aimed to evaluate these inflammation-associated markers simultaneously in upper tract urothelial carcinoma (UTUC).
Materials and Methods: A total of 195 patients with UTUC who received radical nephroureterectomy between 2005 and 2010 were included