

Commentary on Cyclin A1 Expression Predicts Progression in pT1 Urothelial Carcinoma of Bladder: A Tissue Microarray Study of 149 Patients Treated by Transurethral Resection

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Commentary

Stage pT1 urothelial carcinomas (UCs) represent a difficult clinical scenario since they show different outcomes and are associated with a high risk of progression to muscle-invasive (MI) tumors. The ability to discriminate those patients that will likely progress to MI bladder cancer (MIBC) and hence benefit from early radical intervention is crucial [1]. Prognostic factors associated with progression to muscle invasion include grade, presence of multiple lesions, presence of carcinoma in situ, lymphovascular invasion and level of lamina propria invasion. Regarding the latter prognostic factors, the evidence from the literature suggests that pT1 sub-staging can provide more precise prognostic information to identify a subset of patients with less favorable prognosis [2,3]. However, defining the level of invasion of lamina propria is not always applicable in clinical practice since optimal section angles and high-quality biopsies are often non achievable. Numerous mRNA, DNA and protein based biomarker studies have been performed to identify prognostic markers at molecular levels [4,5]. However, despite huge efforts, no molecular biomarker with prognostic potential is currently suitable for clinical applications. Previous studies reported that accumulation of cyclin A1, an important transcription factor, leads to an invasive bladder cancer phenotype [6]. By our previous finding of epigenetic alterations of cyclin A1 in bladder cancer, our group decided to evaluate its expression and prognostic implication in a set of well characterized pT1 tumors (total=149) using tissue microarrays (TMA). Our results demonstrated that Cyclin A1 positivity was significantly associated with tumour progression. Moreover, we found that combining pT1 stage at biopsy and cyclin A1 expression further improved tumour progression prediction compared with pT1 stage at biopsy alone and

cyclin A1 expression alone. Our group demonstrated an important role for cyclin A1 expression as a potential prognostic marker in pT1 bladder cancer; specifically, we demonstrated that cyclin A1 immunohistochemistry can be useful in defining a subset of patients at risk for tumour progression.

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