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High-grade urothelial cancer risk in patients with atypical urothelial cells: A hospital-based database

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Background: Urine Cytology (UC) is an accurate method in the search for high-grade urothelial carcinoma with cyto-histologic correlation as high as 80-100%. Although an "atypical" or "suspicious" UC report carries a higher association with urothelial carcinoma in comparison with "reactive" or "negative" diagnoses, there remains great heterogeneity between the teams. The Paris System for Reporting Urinary Cytology currently in progress aims at creating a reliable system to identify patients who need immediate cystoscopy vs. those who can be followed at an interval based upon risk stratification.

Aim: To investigate whether atypical, non-superficial urothelial cells (AUC) "of undetermined significance" and "cannot exclude high grade" (AUC-US and AUC-H both candidates of the PS-UC) might be associated with concomitant high-grade urothelial cancer and increased high-grade cancer risk in the follow-up period.

Methods: A hospital-based patient Excel database to describe the diagnostic and prognostic values of AUC-US and AUC-H cases. Individual data were collected from the DIAMIC database of the pathology laboratory information system and from the easily information system developed by the Hospices Civils de Lyon. Statistical methods included the online BiostaTGV analysis software, Chi-2 square and Fischer's exact test, Kaplan-Meier method and log rank test. Overview and follow-up of data contents: Demographic information including age, sex and birth date. Clinico-pathologic variables include cystoscopy, imaging techniques and histology. Treatment data (biopsies and TUR, bladder and upper tract surgery, BCG-, radio- and chemotherapy) including dates were recorded. Missing data being an issue, the database is regularly checked for data inconsistencies and completeness.

Inclusion period: July 1999 to December 2013 and Follow-up until May 2014 (at least 6 months). Cases from January 2014 were not recorded at the date of writing.

Main Results: Before exclusion, there were 474 AUC cases representing 1.6% of all UC reports which is in accordance with our previous reports. After 94 cases (19.8%) have been excluded, there remained 294 AUC-US and 86 AUC-H cases in 237 patients. The predictive value of AUC-H for urothelial carcinoma (all grades) was 83.7% vs. 73.5% for AUC-US (p=0.04). Recurrence-free survival of patients with AUC-H was significantly shorter than that of patients with AUC-US (p=0.007). Detailed results will be given to the Cytopathology-2015 conference.

Biography

Eric Piaton was trained in Pathology at Lyon, France and was then appointed Full-Time Practitioner at the University Hospital of Grenoble; there he spent 6 years in pulmonary, central nervous system and urologic cytopathology. He took his MD degree in 1986 and his PhD in 1990. Since 1992, he is half-time Assistant Professor in Histology and half-time Pathologist at the Centre de PathologieEst, Bron with special interest and training in all organs except thyroid. He was Secretary General of the French Society of Clinical Cytology, 2011-14. His current research focuses on markers applied to urothelial malignancy.

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