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Hexyl Aminolevulinate in the Detection of Bladder Cancer

A Viewpoint by Patrice Jichlinski

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The management of superficial bladder cancer remains a clinical challenge. Although not necessarily aggressive in its course, this disease is characterised by a very high local recurrence rate and may show bad prognostic signs, such as carcinoma in situ (CIS). Bladder washing cytology and cystoscopy remain the gold standard methods for the diagnosis of superficial bladder cancer. However, the high sensitivity of cytology for high-grade cancer cells notwithstanding, the full extent of flat urothelial malignancies (e.g. CIS or high-grade dysplasia) on bladder mucosa is hard to evaluate using conventional white-light cystoscopy.

The results of recent phase II and III trials with hexyl aminolevulinate strengthen >10 years' experience with fluorescence cystoscopy and confirm the usefulness of this additional tool in the diagnosis, staging and management of superficial bladder cancer. The high sensitivity of the method in the detection of flat urothelial malignancies clearly exceeds the risk of false-positive findings. Moreover, as a technique, it is simple to perform, perfectly adapted to current endoscopic equipment and supports a standardisation of superficial bladder cancer endoscopic management.[1] Current (2005) European Association of Urology guidelines recommend fluorescence cystoscopy, e.g. with hexyl aminolevulinate, as an adjunct to conventional cystoscopy for the diagnosis of CIS (Grade B). Fluorescence cystoscopy not only helps appraise the extent of urothelial malignant lesions in the bladder, but also contributes to a better knowledge of the possible disease course. As such, it provides a valuable asset for teaching urology students.

A phase III study documenting reduced early recurrence due to improved detection and resection of superficial (papillary) bladder cancer after fluorescence cystoscopy with hexyl aminolevulinate versus conventional cystoscopy is currently in progress.[2] In addition, hexyl aminolevulinate-induced cell or tissue photosensitisation may be involved in other applications, such as cytology (e.g. more accurate identification of cancerous, as opposed to non-cancerous, cells), photodetection of malignancies in other organ systems and photodynamic therapy. ▲

References

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