

Malignant urinary cytology of unknown origin – blue light flexible cystoscopy with Hexaminolevulinate (HAL) at the outpatient clinic may be a valuable diagnostic tool

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Introduction & objectives

The diagnostic process may be extensive in patients with positive or suspicious cytology when white-light flexible cystoscopy (WLFC) is negative. Next steps, involves resection biopsies and exclusion of upper urinary tract tumour, procedures that are performed in the operating theatre (OT), being demanding on both the patient and the healthcare system.¹

Blue-light cystoscopy (BLC) with hexaminolevulinate (HAL) is routinely used as an adjunct to white light cystoscopy to allow improved detection of malignancy, leading to more complete resection and improved short and long-term recurrence rates.² We wanted to study if flexible BLC (BLFC) might detect bladder tumours already at the outpatient clinic and how BLFC can be used to improve and shorten the diagnostic process in patients with normal WLFC and positive or suspicious urine cytology.

Materials & methods

The present data was collected from a Nordic prospective multicentre registry (Nordic BLFC registry) initiated to observe clinical utility and explore possible benefits of BLFC. All patients had been investigated with WLFC and CT urography, both regarded as negative.

HAL was installed in the bladder one hour before cystoscopy. In local gel anaesthesia the bladder was examined with WLFC followed by BLFC. Suspicious lesions were biopsied and later examined by histopathology. Small tumours and localised carcinoma in situ (CIS) were fulgurated by either electrocautery or diode laser (980 nm).

Table 1. Demographics and characteristics of enrolled patients (n=40)

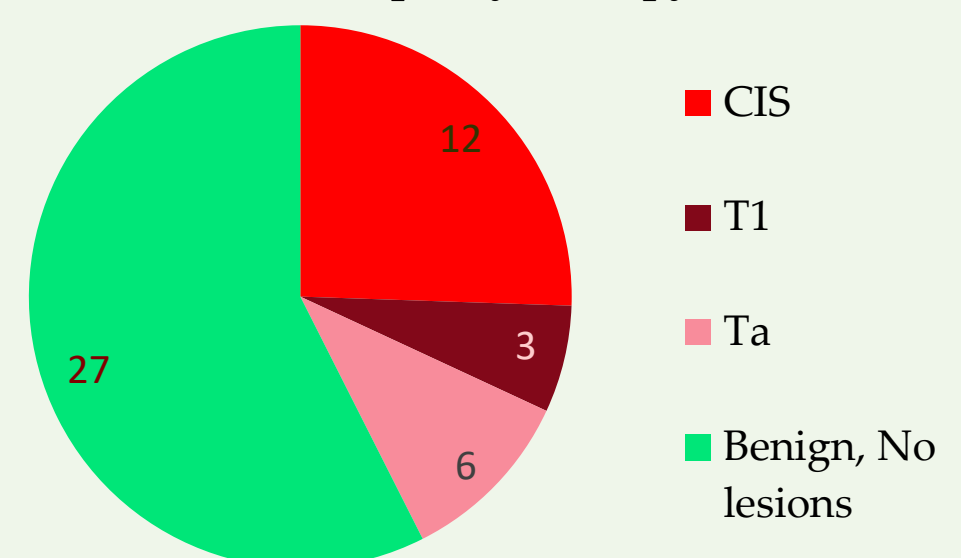
Mean age	73 years
Male (n)	33
Female (n)	7
History of urothelial malignancy	78%
Earlier high grade urothelial tumour	50%

Results

Forty patients from four different hospitals were selected, displaying positive or suspicious urinary cytology (Table 1). Bladder cancer was diagnosed in 20 out of 47 (43%) cystoscopies (Figure 1). Six patients underwent BLFC more than once. In 35% (7/20) of these cystoscopies malignant tumour(s) was only detected by BLFC. 14 patients, including 7 detected by BLFC only (CIS:5, Ta:2), could instantly be treated completely with ablation at the outpatient clinic in the same session or later with BCG, omitting the need for a procedure in the OT under general anaesthesia.

The majority (27/29 patients) stated that they preferred to have BLFC at the outpatient clinic, and 2 patients preferred the alternative procedure (TURB with resection biopsies) at the OT under general anaesthesia. No serious adverse events or allergic reactions were registered.

Figure 1. Detection rate per cystoscopy (n=47)



Conclusion

BLFC at the outpatient clinic, may in a simple and rapid way solve many unclear cases with malignant or suspicious urinary cytology and it is easy to use at the outpatient clinic. The procedure is well tolerated and generally preferred by patients.

References:

1. Babjuk M, et al. 2019 *Eur Urol*. EAU Guidelines on NMIBC
2. Gallagher KM, et al 2017 *World J Urol*.35(12):1871-1877

Acknowledgement:

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