



**RESULTS OF TRANSURETHRAL RESECTION OF EN-BLOC MUSCULAR NON-
INVASIVE BLADDER CANCER.**

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ABSTRACT: Bladder cancer (BC) is a rather common disease. The incidence of bladder cancer in the population is gradually increasing. In non-invasive bladder carcinoma (NICM), transurethral resection of bladder tumour (TUR) is the cornerstone of treatment. Successful treatment of these tumours depends on adequate initial resection and an accurate histological diagnosis. After TUR alone, around 50-70% of patients develop recurrence. Reasons for this high rate of recurrence of NICMP have been cited for incomplete resection during the initial TUR, aggressive tumor biology, and implantation of tumor cells.

Keywords: tumor cell implantation, transurethral resection of bladder tumor

Introduction. Bladder cancer is the world's 9th most common cancer in men, with a standardized incidence rate of 9.0 per 100 000 person-years for men and 2.2 per 100 000 person-years for women. Bladder cancer is a common and serious disease that places a heavy burden on the health care system. Patients diagnosed with a bladder tumour on flexible cystoscopy should be offered transurethral resection of the bladder tumour (bladder TUR). As a minimally invasive procedure, it has become the standard for the initial treatment of bladder cancer. This operation aims to establish the diagnosis, correct tumour stage (T-stage) and cure the disease in cases of non-muscle-invasive bladder cancer (NIMBC). There are two main problems with the standard standard resection procedure. First, the bladder tumour is removed piecemeal. This results in fragmentation of the tumour and floating tumour cells inside the bladder. The tumour cells can re-implant onto the bladder wall and lead to an early recurrence of the disease. Secondly, "complete resection of the tumour" is often only defined by endoscopic vision. Due to the inherited nature of a partial resection, it is not possible to assess the resection boundary by histological methods. The charring effect of the resection bed can also interfere with the assessment of a "complete tumour resection" (1,5). Routine repeat bladder TUR is recommended for selected patients (any presence of T1 disease, G3 disease or any absence of detrusor muscle in the first TURBT specimen) even after 'complete resection of the tumour' in the first TUR. Secondary TURMT has been shown to reveal residual disease in 33-55% of patients and to outstage disease in 4-45% of patients. These results highlighted the limitations of TURPT in establishing complete tumour resection. Single-block transurethral resection (EBR) has been described as an alternative surgical technique for bladder tumour resection[12].

Purpose of the study: Prospective non-randomised interventional transurethral resection for bladder tumour.

Materials and Methods: A prospective non-randomised interventional study was carried out at the Republican Specialised Scientific and Practical Medical Centre for Oncology and Radiology.

Clinical data on tumour size (measured by ultrasound in 37 patients and contrast-enhanced computed tomography in 33 patients) and location were recorded. Study endpoints, i.e. recurrence and progression rates, were compared in the two groups. REV was performed by a single surgeon. To minimise bias against a deliberate attempt by the surgeon who performed REV to remove the tumour completely, TUR was performed by other urologists.

Results: Patients were followed up after the initial TUR with control cystoscopy at intervals of 3 months for the first 2 years, 6 months for the next 2 years, and then annually. Final analysis: A total of 70 patients were included, 30 had REV and 40 had TUR. Single tumours were removed in 53 (75.7%) and multiple tumours in 17 (24.2%) patients (Figure 1).

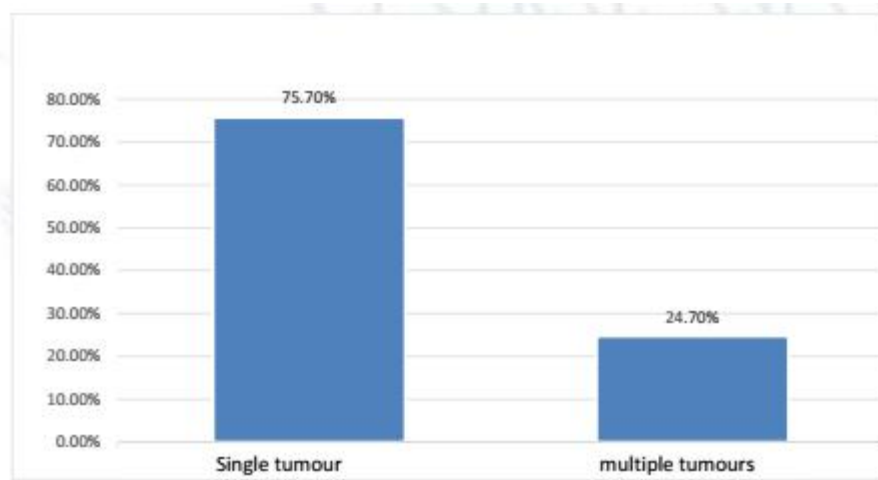


Figure 1 - Distribution of study patients (n=70) according to the number of tumours removed
There were 10 (14.3%) tumours in the bladder floor area, 38 (54.3%) in the lateral walls, 13 (18.6%) in the anterior wall, 38 (54.3%) in the bladder neck and Lieto triangle area, with the ureteral orifice involvement in 25 (35.7%) patients. Tumours of pT1 category were removed in 55 (79.2%) and pTa in 14 (20.7%) patients. Most tumours (60.8%) were of intermediate to low histological grade, with 89.1% (90) patients. The EORTC classification of high and highest risk for recurrence and progression (Figure 2).

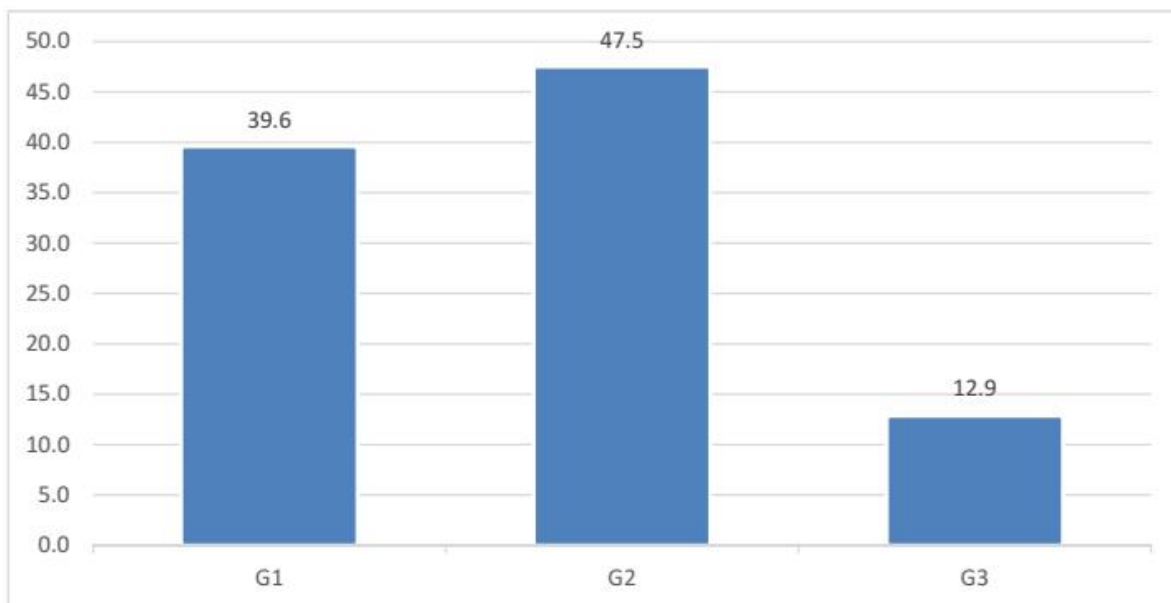


Figure 2 - Distribution of study patients (n=70) according to the degree of histological differentiation of the tumours (WHO grading in 1973)

The Mann-Whitney U-test, the χ^2 test and the Fisher exact test were used to compare data between the groups of patients studied. The main and control groups did not differ statistically by sex, age, T grade, grade of tumour histological differentiation (WHO grading in 1973), EORTC recurrence and progression risk groups, and duration of follow-up ($p > 0.05$).

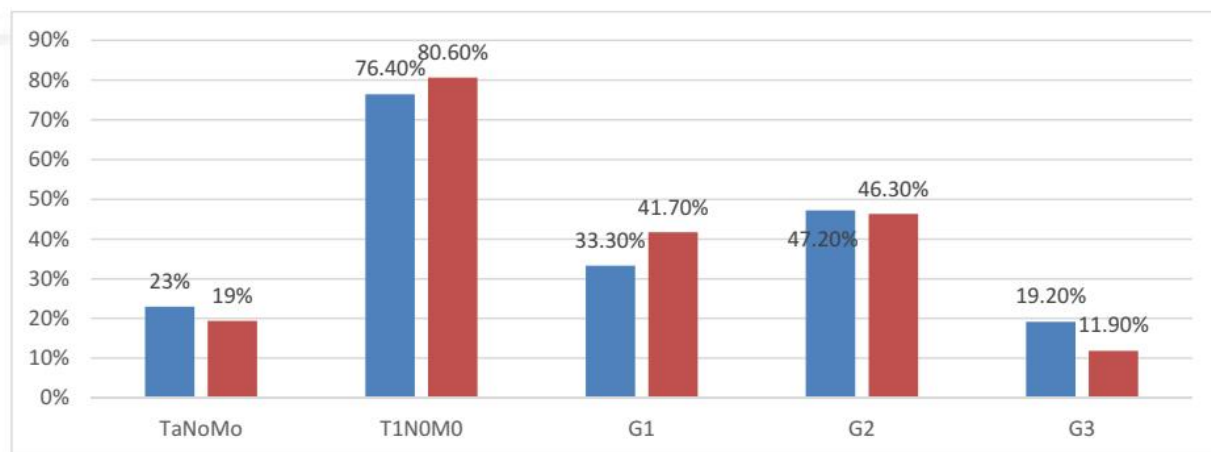


Figure 3 - Comparison of groups of study patients

Multiple tumours ($p=0.023$) and larger tumours ($p=0.0001$) were statistically significantly more common in the MBTUR group than in the control group. At the same time, tumours in the control group were more frequently located on the lateral bladder walls ($p=0.012$) and the involvement of the ureteral orifices was significantly less frequent ($p=0.002$). Patients were followed up using cystoscopy and ultrasound. A histologically verified tumour in the bladder or



the prostatic urethra was considered as recurrence. Progression was considered if a muscle-invasive tumour developed in the bladder or if there were regional or distant metastases. Patients without relapse or progression were censored by date of last follow-up.

Conclusions: Thus, en-bloc resection not only provided a piece of tissue with all adjacent bladder layers for a better histopathological profile, but also resulted in a reduced recurrence rate. Looking at recurrence patterns in our patients, REV seems to be the best way to reduce the risk of recurrence as it provides a complete resection as only 1 (16%) patient had recurrence in the same area compared to 6 (40%) patients in the TUR group 6 (40%).

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