Does the choice of anesthesia technique affect recurrence rates after transurethral resection of bladder tumors

P. Stratigopoulou ¹

¹ Consultant Anaesthetist, LAIKO GENERAL HOSPITAL OF ATHENS GREECE

Background and Aims:

Association between cancer recurrence and anesthetic technique has been an area of investigation recently. Perioperative factors (surgical inflammation, volatile anesthetics, opioids) have been implicated in negatively modulating immune system to promote cancer cell growth. Regional anesthesia has been suggested to reduce perioperative immunosuppression and improve function of cancer-killing immune cells. The aim of the study was to determine if anesthetic technique influences recurrence following transurethral resection of bladder tumor (TURBT)

Methods:

Data from 231 patients who underwent TURBT for non-muscle invasive urothelial bladder cancer (NMIBC) between 2012-2014 were reviewed. Variables collected included key-factors influencing recurrence of NMIBC (stage, grade, size, number of tumors), adjuvant anti-cancer therapies, anesthetic type (general GA vs. subarachnoid block SB), age, ASA classification. Associations between patient characteristics, incidence of recurrence, progression and overall mortality were tested with Chi-Square. Kaplan-Meier estimates were conducted for time to recurrence, progression, and mortality. Logistic regression/ Cox proportional hazards regression model were used to explore association between anesthesia technique and recurrence.

Results

In univariable analysis, patients under SB (n=135) had a longer median time to recurrence (42.1 vs 17.2 months, $p=0.014$) compared to those under GA (n=96). Adjuvant therapies ($p=0.003$) and risk groupings (amalgam of stage, grade, CIS, number and size of tumors) ($p=0.042$) were all associated with recurrence rates. In multivariable analyses patients under GA had a higher incidence of recurrence (OR=2.062, 95% CI=1.14-3.74, $p=0.017$) and earlier time to recurrence (HR=1.57, 95% CI=1.13-2.19, $p=0.008$) compared to patients under SB. Anesthetic type was not associated with cancer progression or overall mortality.

Conclusions:

Patients receiving GA had higher incidence and earlier time to recurrence following TURBT for NMIBC. Large-scale, prospective studies are needed to further delineate this association.

Keywords

SHIVERING
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