

IN NMIBC*, THE OCCURRENCE OF RESIDUAL TUMOUR LEADING TO RECURRENCE AND PROGRESSION IS HIGH AFTER REPEAT TURBT#

*NMIBC, non-muscle invasive bladder cancer (T1 and high-grade Ta tumours); # TURBT, transurethral resection of bladder tumour

Evaluation of intravesical Bacillus calmette–guerin (BCG) treatment on outcomes of patients with T0 after repeat Transurethral resection of bladder mass (re-TURBT) with high-risk NMIBC

A retrospective case study was conducted for evaluation of the effect of BCG maintenance therapy on the prognosis of patients with T0 after re-TURBT with a median follow-up of 63 months.



Population/Patient

Included **107 patients** with high-risk NMIBC with **pT0** after initial TURBT, after having undergone repeat TURBT (re-TURBT)
Patients were divided into 3 groups post re-TURBT: Non-BCG group, BCG induction group and BCG maintenance group
Overall the 3 groups had comparable baseline characteristics

However, among the 3 groups, the BCG maintenance and induction groups had higher stage i.e. T1 ($p = 0.001$) and higher percentage of concomitant CIS ($p = 0.037$)



Intervention

29 patients were included in BCG induction group, wherein patients were given one dose of intravesical BCG every week for a period of six weeks

26 patients were included in BCG maintenance group who were undergoing intravesical BCG treatment, followed by maintenance as per SWOG protocol



Comparator/Control

52 patients were included in non-BCG group where patients were not treated with intravesical BCG for T0 following repeat TURBT



Outcome

- Recurrence rates in the non-BCG, BCG induction, and BCG maintenance groups were **46.2%, 28.3%, and 19.2%**, respectively ($p = 0.043$) showing clear superiority of intravesical BCG, having greatest effect with maintenance therapy

- BCG maintenance group showed significantly higher recurrence-free survival than the BCG induction group ($p = 0.032$) (Figure)

- Higher progression free survival (PFS) was observed in BCG maintenance group as compared to other group but the difference was of borderline statistical significance ($p = 0.056$)

- However, the above results should be interpreted in light of Cox multivariable regression, on account of imbalances in baseline characteristics with the following predictors being significant:

a) BCG maintenance: **~80% lesser risk** of recurrence-free survival [Hazard ratio: 0.198, 95% confidence interval: 0.051 - 0.763, $p = 0.019$]

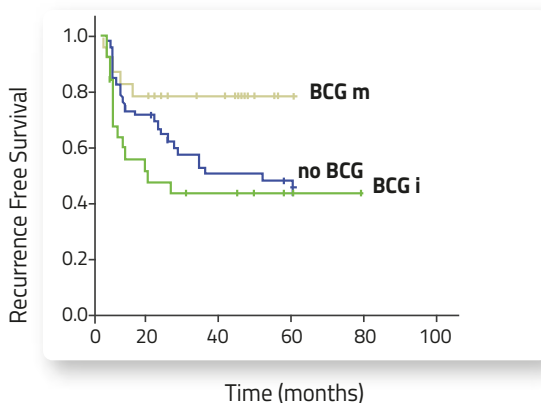
b) T1: **~232% greater risk** of recurrence-free survival [Hazard ratio: 3.323, 95% confidence interval: 1.232 - 5.7271, $p = 0.003$]

- The rate of radical cystectomy was lowest in the BCG maintenance group ($p > 0.05$)



Time:

The median follow-up time was 63 months.



Despite limitations of the study, being a retrospective cohort study (with risk of selection bias unlike RCTs) and having small sample size:



Intravesical BCG maintenance therapy reduces recurrence rates in patients with T0 after TURBT



Intravesical BCG maintenance therapy is required in high risk NMIBC patients even at T0 after repeat TURBT

Log rank test	P-Value
no BCG vs BCG i	0.486
No BCG vs BCG m	0.077
BCG i vs BCG m	0.032

Figure : Comparative effects of intravesical BCG treatment on recurrence free survival in pT0 patients with repeat TURBT in high-risk NMIBC patients among three groups

NMIBC - non-muscle-invasive bladder cancer, BCG - Bacillus Calmette-Guérin, Updated as on May 2020

BCG i: BCG induction group; BCG m: BCG maintenance group; CIS: Carcinoma in situ; SWOG: Southwest Oncology Group

Reference:

Yuk HD, Jeong CW, Kwak C, Kim HH, Ku JH. Should intravesical Bacillus Calmette-Guerin (BCG) treatment be administered to patients with T0 after repeat transurethral resection of bladder tumor in patients with high-risk non-muscle invasive bladder cancer? PLoS One. 2018 Nov 29;13(11):e0208267.