

CAN THE SYSTEMIC IMMUNE INFLAMMATION INDEX BE A PREDICTOR OF BCG RESPONSE IN PATIENTS WITH HIGH-RISK NON-MUSCLE INVASIVE BLADDER CANCER?

“Is it possible to estimate the BCG response earlier with the SII?”

ABSTRACT

Aim: We aimed to investigate the predictor role of the systemic immune-inflammation index (SII) on Bacille Calmette Guerin (BCG) response in patients with high-risk non-muscle invasive bladder cancer (NMIBC).

Methods: A total of 96 patients with high-risk NMIBC, who received intravesical BCG, were enrolled in the study. BCG responsive group (group 1) and BCG failure group (group 2) were compared in terms of demographic and pathological data, peripheral lymphocyte, neutrophil, and platelet counts, neutrophile lymphocyte ratio (NLR), platelet lymphocyte ratio (PLR), SII, recurrence free survival (RFS) and progression free survival (PFS). The prognostic ability of the SII for progression was analyzed with multivariate backward stepwise regression models.

Results: The mean follow-up time 34.635 ± 14.7 months. Group 2 had significantly higher SII, peripheral lymphocyte, neutrophil, and platelet counts than group 1. A ROC curve was plotted for the SII to predict the BCG failure and the cut-off point was calculated as 672.75. Effect of the SII to the model was statistically significant ($p=0.003$) and a higher SII increased the progression one-fold. A tumor greater than 30 mm in size and a high SII together increased the progression 3.6 folds.

Conclusions: The SII might be a successful, non-invasive and low-cost parameter for prediction of BCG failure in patients with high-risk NMIBC. The cut-off value for SII is 672.75 and above this level BCG failure and progression to MIBC might be anticipated. However, these results should be validated in prospective randomized controlled studies with large patient groups.

Keywords: Bacillus Calmette-Guérin; Biomarker; Inflammation; Non-muscle invasive bladder cancer; Prognosis; Systemic immune inflammation index.

What's already known about this topic?

- BCG is the most common intravesical immunotherapy for treating high-risk NMIBC.
- There are no markers used to predict BCG treatment failure.

What does this article add?

- The SII might be promising for prediction of BCG failure in patients with high-risk NMIBC.
- SII is a non-invasive and a low-cost parameter to predict the success of the BCG treatment.
- In addition to the tumor size greater than 3 cm, high SII value increases the risk of progression.

Message for the clinic: what is the 'take-home' message for the clinician?

- Evaluation of SII before BCG treatment can guide both the clinician and the patient about the success of the treatment.
- We recommend that SII may be evaluated before BCG treatment because it is a non-invasive and a low-cost parameter.