

Can The Systemic Immune Inflammation Index Be A Predictor Of BCG Response In Patients With High-Risk Non-Muscle Invasive Bladder Cancer?

Serkan Akan¹, Caner Ediz², Aytaç Şahin³, Hasan Huseyin Tavukcu⁴, Ahmet Ürkmez⁵, Alper Horasan², Omer Yilmaz², and Ayhan Verit³

¹Sultan Abdülhamid Han Training and Research Hospital

²Sultan Abdulhamid Han Egitim ve Arastirma Hastanesi

³Health Sciences University, Fatih Sultan Mehmet Training and Research Hospital

⁴Affiliation not available

⁵The University of Texas MD Anderson Cancer Center

October 6, 2020

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.

Hosted file

abstract.pdf available at <https://authorea.com/users/356082/articles/485060-can-the-systemic-immune-inflammation-index-be-a-predictor-of-bcg-response-in-patients-with-high-risk-non-muscle-invasive-bladder-cancer>

Hosted file

SII main doc.pdf available at <https://authorea.com/users/356082/articles/485060-can-the-systemic-immune-inflammation-index-be-a-predictor-of-bcg-response-in-patients-with-high-risk-non-muscle-invasive-bladder-cancer>

Hosted file

Table 1.pdf available at <https://authorea.com/users/356082/articles/485060-can-the-systemic-immune-inflammation-index-be-a-predictor-of-bcg-response-in-patients-with-high-risk-non-muscle-invasive-bladder-cancer>

Hosted file

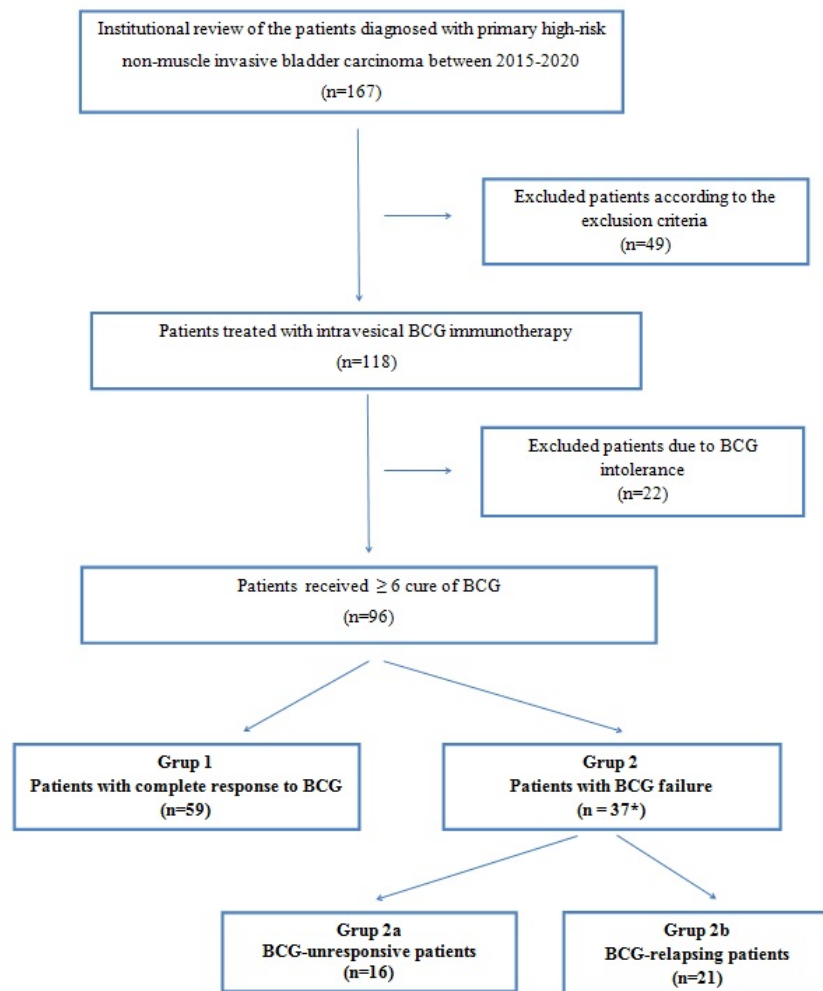
Table 2.pdf available at <https://authorea.com/users/356082/articles/485060-can-the-systemic-immune-inflammation-index-be-a-predictor-of-bcg-response-in-patients-with-high-risk-non-muscle-invasive-bladder-cancer>

Hosted file

Table 3.pdf available at <https://authorea.com/users/356082/articles/485060-can-the-systemic-immune-inflammation-index-be-a-predictor-of-bcg-response-in-patients-with-high-risk-non-muscle-invasive-bladder-cancer>

Hosted file

Table 4.pdf available at <https://authorea.com/users/356082/articles/485060-can-the-systemic-immune-inflammation-index-be-a-predictor-of-bcg-response-in-patients-with-high-risk-non-muscle-invasive-bladder-cancer>



* Progression to muscle-invasive disease in 17 patients

