



University
of Glasgow

Dolan, R. D. and McMillan, D. C. (2017) Neutrophil-to-lymphocyte ratio as a bladder cancer biomarker: assessing prognostic and predictive value in SWOG 8710. *Cancer*, 123(19), p. 3855.

There may be differences between this version and the published version. You are advised to consult the publisher's version if you wish to cite from it.

Dolan, R. D. and McMillan, D. C. (2017) Neutrophil-to-lymphocyte ratio as a bladder cancer biomarker: assessing prognostic and predictive value in SWOG 8710. *Cancer*, 123(19), p. 3855. (doi:[10.1002/cncr.30872](https://doi.org/10.1002/cncr.30872))

This article may be used for non-commercial purposes in accordance with [Wiley Terms and Conditions for Self-Archiving](#).

<http://eprints.gla.ac.uk/143777/>

Deposited on: 08 August 2017

Comments on “Neutrophil-to-Lymphocyte Ratio as a Bladder Cancer Biomarker: Assessing prognostic and Predictive Value in SWOG 8710”

Ross Dolan, Donald McMillan

To the Editor: It was with interest that we read the article by Ojerholm et al(1) reporting a secondary analysis of the recent SWOG 8710 trial assessing cystectomy with or without neoadjuvant chemotherapy (NAC) in 317 patients with muscle invasive bladder cancer. From the analysis the authors conclude that NLR is neither a prognostic nor predictive biomarker for overall survival in muscle-invasive bladder cancer. As they acknowledge this was not consistent with previous studies that reported NLR has prognostic value in patients with bladder cancer(2-6) and with a large section of the literature which shows that NLR has prognostic value in a variety of common solid tumours, (7, 8) as well as predictive value for the effectiveness of NAC(5).

The difference between the present study and the majority of the previously published literature was that NLR was only analysed as a continuous variable. The authors justify this approach as statistically superior to analysis using standard thresholds (NLR: ≥ 3 and ≥ 5) by concluding that all other reports are biased in some way. However, there are also reports of NLR having prognostic value in prospectively collected data from clinical trials using standard thresholds, such as a $NLR \geq 3$ (9-11) or ≥ 5 (12, 13).

These data question their conclusions, in particular that previous analysis using thresholds is statistically inappropriate. Therefore, in the interest of scientific balance it would be important for the authors to also present their data using established thresholds for NLR.

References:

1. Ojerholm E, Smith A, Hwang WT, Baumann BC, Tucker KN, Lerner SP, et al. Neutrophil-to-lymphocyte ratio as a bladder cancer biomarker: Assessing prognostic and predictive value in SWOG 8710. *Cancer*. 2017;123(5):794-801.
2. Gondo T, Nakashima J, Ohno Y, Choichiro O, Horiguchi Y, Namiki K, et al. Prognostic value of neutrophil-to-lymphocyte ratio and establishment of novel preoperative risk stratification model in bladder cancer patients treated with radical cystectomy. *Urology*. 2012;79(5):1085-91.
3. Krane LS, Richards KA, Kader AK, Davis R, Balaji KC, Hemal AK. Preoperative neutrophil/lymphocyte ratio predicts overall survival and extravesical disease in patients undergoing radical cystectomy. *Journal of endourology*. 2013;27(8):1046-50.
4. Viers BR, Boorjian SA, Frank I, Tarrell RF, Thapa P, Karnes RJ, et al. Pretreatment neutrophil-to-lymphocyte ratio is associated with advanced pathologic tumor stage and increased cancer-specific mortality among patients with urothelial carcinoma of the bladder undergoing radical cystectomy. *European urology*. 2014;66(6):1157-64.
5. Neoadjuvant chemotherapy in invasive bladder cancer: update of a systematic review and meta-analysis of individual patient data advanced bladder cancer (ABC) meta-analysis collaboration. *European urology*. 2005;48(2):202-5; discussion 5-6.
6. Ferro M, De Cobelli O, Buonerba C, Di Lorenzo G, Capece M, Bruzzese D, et al. Modified Glasgow Prognostic Score is Associated With Risk of Recurrence in Bladder Cancer Patients After Radical Cystectomy: A Multicenter Experience. *Medicine (Baltimore)*. 2015;94(42):e1861.
7. Templeton AJ, McNamara MG, Seruga B, Vera-Badillo FE, Aneja P, Ocana A, et al. Prognostic role of neutrophil-to-lymphocyte ratio in solid tumors: a systematic review and meta-analysis. *Journal of the National Cancer Institute*. 2014;106(6):dju124.

8. Guthrie GJ, Charles KA, Roxburgh CS, Horgan PG, McMillan DC, Clarke SJ. The systemic inflammation-based neutrophil-lymphocyte ratio: experience in patients with cancer. *Critical reviews in oncology/hematology*. 2013;88(1):218-30.
9. Grenader T, Waddell T, Peckitt C, Oates J, Starling N, Cunningham D, et al. Prognostic value of neutrophil-to-lymphocyte ratio in advanced oesophago-gastric cancer: exploratory analysis of the REAL-2 trial. *Annals of oncology : official journal of the European Society for Medical Oncology*. 2016;27(4):687-92.
10. Lorente D, Mateo J, Templeton AJ, Zafeiriou Z, Bianchini D, Ferraldeschi R, et al. Baseline neutrophil-lymphocyte ratio (NLR) is associated with survival and response to treatment with second-line chemotherapy for advanced prostate cancer independent of baseline steroid use. *Annals of oncology : official journal of the European Society for Medical Oncology*. 2015;26(4):750-5.
11. Asano Y, Kashiwagi S, Onoda N, Noda S, Kawajiri H, Takashima T, et al. Predictive Value of Neutrophil/Lymphocyte Ratio for Efficacy of Preoperative Chemotherapy in Triple-Negative Breast Cancer. *Annals of surgical oncology*. 2016;23(4):1104-10.
12. Linton A, Pond G, Clarke S, Vardy J, Galsky M, Sonpavde G. Glasgow prognostic score as a prognostic factor in metastatic castration-resistant prostate cancer treated with docetaxel-based chemotherapy. *Clinical genitourinary cancer*. 2013;11(4):423-30.
13. Mitchell P, Thatcher N, Socinski MA, Wasilewska-Tesluk E, Horwood K, Szczesna A, et al. Tecemotide in unresectable stage III non-small-cell lung cancer in the phase III START study: updated overall survival and biomarker analyses. *Annals of oncology : official journal of the European Society for Medical Oncology*. 2015;26(6):1134-42.