Introduction: Colorectal cancer is the third leading cause of cancer and the third leading cause of death from cancer worldwide. In Mexico, it is the second leading cause of digestive tract cancer after gastric cancer. The treatment of choice for rectal cancer in the middle and lower third is radiochemotherapy followed by total excision of the mesorectum. Pathological complete response (pCR), is the most important prognostic factors, have been studied associated biomarkers pRC, including those associated with inflammatory response as the Neutrophil-Lymphocyte index (INL). The aim of this study is to evaluate the INL as a predictor factor pathological complete response.

Methods: A total of 222 patients were included, from January 2005 to December 2011, patients with middle and lower third rectal cancer, clinical stages II and III. All patients were stratified by physical examination, CT scan, colonoscopy, chest X-ray, was evaluated with levels of leukocytes, lymphocytes, neutrophils, ACE, tumor size, circumference, was divided into 2 groups: high and low INL (≤ 4 and > 4), we excluded patients with severe immunosuppression, stage IV, ECOG 3 and up, all patients subjected to radiochemotherapy and surgery, a statistical analysis was performed with frequency, association was performed using chi2 and logistic regression for multivariate analysis.

Results: A total of 121 men and 101 women, rectal bleeding was present in 70% of patients. Patients were divided into 2 groups: INL ≤ 4 and > 4 (145 and 77 patients respectively). There was a 29.7% overall pathological complete response with. pRC in INL ≤ 4 42.7% and > 4 5.2%, residual microscopic (partial response) of 29% with INL ≤ 4 and INL > 4 33.7% 4.28, unanswer INL ≤ % INL > 4 61.1%, the factors associated with pathological complete response are: Hb > 10 p = 0.035, p = 0.00001 INL ≤ 4, ACE ≤ 5 ng/dl with p = 0.003, clinical stage II with p = 0.002, week interval between neoadjuvant therapy and surgery with p = 0.027 in univariate analysis were significant: stage, ACE, weeks apart and INL with p = 0.002, 0.003, 0.056 and 0.00001 respectively At multivariate analysis. Independent variables were: stage with p = 0.000019, p = 0.016 and ACE INL with p = 0.000018.

Conclusion: With results we conclude neutrophils-Lymphocytes Index that may be employed as a predictor of pretreatment and pathologic response can through the Splitting a patient in responders or non-responders to neoadjuvant therapy.