



Original Article

Analysis of neutrophil-lymphocyte ratio as a prognostic element in the response to neoadjuvant therapy in rectal cancer



Leonardo Vieira Polli^{a,b,c,*}, Mauro Pinho^{a,d}

^a Postgraduate Health and Environment Program, Universidade da Região de Joinville (UNIVILLE), Joinville, SC, Brazil

^b Service de Oncology/Radiotherapy, Hospital Municipal São José, Joinville, SC, Brazil

^c Hospital São José, Jaraguá do Sul, SC, Brazil

^d Department of Surgery, Hospital Municipal São José, Joinville, SC, Brazil

ARTICLE INFO

Article history:

Received 1 September 2014

Accepted 28 September 2014

Available online 28 January 2015

Keywords:

Neoplasia

Rectum

Radiotherapy

Lymphocytes

Chemotherapy

ABSTRACT

Introduction: The previous radio-chemotherapy approach is highly relevant in the management of rectal cancer, collaborating on organ functional preservation, being performed prior to surgery. The inflammatory response plays an important role in this treatment.

Objective: It consists in correlating the number of peripheral lymphocytes and the neutrophil/lymphocyte ratio in the peripheral blood with tumor response to neoadjuvant therapy.

Methods: Review of medical records of patients with rectal cancer in HMSJ and HSJ Oncology Services since 2009 – cases submitted to neoadjuvant treatment with radio-chemotherapy. **Results:** Of those 96 patients with this disease who underwent neoadjuvant therapy with radio-chemotherapy, 35 patients were eligible; complete tumor response was observed in 11 cases (31%), and 9 were submitted to surgical treatment. Comparing the leukocyte parameters between patients with complete response (CR) and incomplete response (IR) the following values were observed: total number of leukocytes (mean) CR 7390.9 × IR 7220.4 ($p=0.8$); total lymphocytes CR 2103 × IR 1960.9 ($p=0.4$); neutrophil/lymphocyte ratio CR 3.55 × IR 3.79 ($p=0.5$). The mean radiotherapy dose was 49.1 Gy, with CR 47.3 × IR 50.0 ($p=0.06$).

Conclusion: It was not possible to demonstrate in this study a significant relationship between complete tumor response to neoadjuvant therapy with respect to blood leukocyte parameters analyzed.

© 2015 Sociedade Brasileira de Coloproctologia. Published by Elsevier Editora Ltda. All rights reserved.

* Corresponding author.

E-mail: Leonardo.polli@univille.br (L.V. Polli), drpolli@hotmail.com (M. Pinho).

Análise da relação neutrófilo-linfócito como elemento prognóstico na resposta à terapia neo-adjuvante no câncer do reto

R E S U M O

Palavras-chave:

Neoplasia
Reto
Radioterapia
Linfócitos
Quimioterapia

Introdução: A abordagem radio-quimioterápica previa apresenta grande relevância no manejo do câncer de reto, colaborando na preservação funcional do órgão, sendo realizada previamente à cirurgia. A resposta inflamatória tem papel importante neste tratamento.

Objetivo: Consiste em correlacionar o número de linfócitos periféricos e a relação neutrófilos/linfócitos no sangue periférico com a resposta tumoral à terapia neo-adjuvante.

Métodos: Revisão de prontuários dos pacientes portadores de câncer retal dos serviços de Oncologia do HMSJ e HSJ, desde 2009, casos submetidos ao tratamento neo-adjuvante com radio-quimioterapia.

Resultados: Do total de 96 pacientes portadores desta enfermidade, submetidos à terapia neo-adjuvante com radio-quimioterapia foram elegíveis 35 pacientes, tendo sido observada resposta completa tumoral em 11 casos (31%), e nove foram submetidos ao tratamento cirúrgico. Na comparação dos parâmetros leucocitários entre os pacientes com resposta completa (RC) e resposta incompleta (RI) foram observados os seguintes valores: número total de leucócitos (média) RC 7390,9 × RI 7220,4 ($p = 0,8$); linfócitos totais RC 2103 × RI 1960,9 ($p = 0,4$); relação neutrófilo/linfócito RC 3,55 × RI 3,79 ($p = 0,5$). A dose radioterápica média foi de 49.1 Gy, sendo RC 47,3 × RI 50,0 ($p = 0,06$).

Conclusão: Não foi possível demonstrar no presente estudo relação significativa entre resposta completa tumoral à terapia neo-adjuvante nos parâmetros analisados do perfil leucocitário.

© 2015 Sociedade Brasileira de Coloproctologia. Publicado por Elsevier Editora Ltda.

Todos os direitos reservados.

Introduction

The good results obtained with the association of chemotherapy with radiotherapy led to the adoption of neoadjuvant therapy in the treatment of rectal cancer, with the aim of promoting a reduction in tumor size, allowing better conditions of resectability and sphincter preservation; this has led some authors to suggest a non-surgical treatment in cases of complete response to neoadjuvant therapy. It was not thus far possible to identify prognostic factors that could contribute to the prognosis, with high levels of accuracy, to the occurrence of tumor regression in response to neoadjuvant therapy.

On the other hand, several studies have suggested that the host immune response plays a very important role in this response. Various aspects of immunology have been the subject of studies, taking into account factors related to the tumor, the host and their interaction. Among these factors, the most consistent results have been obtained in the evaluation of local and systemic lymphocytic response, characterized by lymphocyte infiltration into the tumor tissue and by a greater presence of lymphocytes in peripheral blood. The prognostic value of this greater systemic lymphocytic expression has been shown by studies suggesting a better tumor response to neoadjuvant therapy in patients who have an increased number of lymphocytes, in proportion to the total number of neutrophils, and this relationship is summarized by the relationship between neutrophils and lymphocytes.¹

Therefore, the aim of this study is to analyze a possible prognostic value of blood leukocytes in peripheral blood with

tumor response to neoadjuvant therapy, observed in a group of patients with rectal cancer.

Methods

Patients

Medical records of 96 patients with rectal cancer, treated in the Radiotherapy Services of the Hospital Municipal São José (HMSJ) in Joinville and of the Hospital São José (HSJ) in Jaraguá do Sul, were reviewed; these patients underwent neoadjuvant treatment with radiotherapy and chemotherapy.

Among these participants, those with incomplete data in their medical records (making it impossible to assess their outcomes) were excluded, as well as patients with no complete blood count (CBC) available for evaluation, patients who did not conclude the radiochemotherapy, or who were lost to oncological follow-up. Thus, 35 patients (14 males) with a mean age of 55 years were eligible.

Neoadjuvant therapy was indicated for patients with rectal adenocarcinomas located in the middle and lower third of the rectum, whose staging suggested parietal invasion (T3 or T4 stage), or by the presence of a possible perirectal lymphadenopathy. All patients underwent proctologic examination, endoscopic assessment and biopsy through colonoscopy or rectosigmoidoscopy, and an imaging examination by computed tomography or magnetic resonance was obtained, in addition to a chest X-ray, to rule out metastatic lesions.

Download English Version:

<https://daneshyari.com/en/article/4296986>

Download Persian Version:

<https://daneshyari.com/article/4296986>

[Daneshyari.com](https://daneshyari.com)