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REVIEW ARTICLE

Sinusitis in patients undergoing allogeneic bone marrow transplantation – a review[☆]



Joanna Ewa Drozd-Sokolowska^a, Jacek Sokolowski^{b,*}, Wiesław Wiktor-Jedrzejczak^a,
Kazimierz Niemczyk^b

^a The Medical University of Warsaw, Oncology and Internal Diseases, Department of Hematology, Warsaw, Poland

^b The Medical University of Warsaw, Department of Otorhinolaryngology, Warsaw, Poland

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KEYWORDS

Sinusitis;
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Abstract

Introduction: Sinusitis is a common morbidity in general population, however little is known about its occurrence in severely immunocompromised patients undergoing allogeneic hematopoietic stem cell transplantation.

Objective: The aim of the study was to analyze the literature concerning sinusitis in patients undergoing allogeneic bone marrow transplantation.

Methods: An electronic database search was performed with the objective of identifying all original trials examining sinusitis in allogeneic hematopoietic stem cell transplant recipients. The search was limited to English-language publications.

Results: Twenty five studies, published between 1985 and 2015 were identified, none of them being a randomized clinical trial. They reported on 31–955 patients, discussing different issues i.e. value of pretransplant sinonasal evaluation and its impact on post-transplant morbidity and mortality, treatment, risk factors analysis.

Conclusion: Results from analyzed studies yielded inconsistent results. Nevertheless, some recommendations for good practice could be made. First, it seems advisable to screen all patients undergoing allogeneic hematopoietic stem cell transplantation with Computed Tomography (CT) prior to procedure. Second, patients with symptoms of sinusitis should be treated before hematopoietic stem cell transplantation (HSCT), preferably with conservative medical approach. Third, patients who have undergone hematopoietic stem cell transplantation should be monitored closely for sinusitis, especially in the early period after transplantation.

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* Corresponding author.

E-mail: jacsokolowski@gmail.com (J. Sokolowski).

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PALAVRAS CHAVE

Sinusite;
Tratamento da sinusite;
Transplante de célula tronco hematopoiética;
Transplante de medula óssea

Sinusite em pacientes submetidos a transplante alogênico de medula óssea – uma revisão

Resumo

Introdução: A sinusite é uma doença comum na população em geral, porém pouco se sabe sobre a sua ocorrência em pacientes gravemente imunocomprometidos submetidos a transplante alogênico de células-tronco hematopoiéticas.

Objetivo: O objetivo do estudo foi analisar a literatura sobre sinusite em pacientes submetidos a transplante alogênico de medula óssea.

Método: Uma busca na base de dados eletrônica foi realizada com o objetivo de identificar todos os artigos originais que investigaram sinusite em receptores de transplante alogênico de células-tronco hematopoiéticas. A busca foi limitada a publicações em língua inglesa.

Resultados: Foram identificados 25 estudos, publicados entre 1985 e 2015, sendo que nenhum deles era um ensaio clínico randomizado. Eles incluíram 31-955 pacientes, discutindo diferentes questões, ou seja, valor da avaliação sinusal pré-transplante e seu impacto na morbidade e mortalidade pós-transplante, tratamento, análise de fatores de risco.

Conclusão: Os resultados dos estudos analisados produziram resultados inconsistentes. No entanto, algumas recomendações para boas práticas poderiam ser feitas. Em primeiro lugar, parece aconselhável avaliar todos os pacientes submetidos a transplante alogênico de hematopoiéticas com tomografia computadorizada (TC) antes do procedimento. Em segundo lugar, os pacientes com sintomas de sinusite devem ser tratados antes de um Transplante de Células-Tronco Hematopoiéticas (TCTH), de preferência com abordagem clínica conservadora. Em terceiro lugar, os pacientes que se submeteram a TCTH devem ser cuidadosamente monitorizados para sinusite, especialmente no período inicial após o transplante.

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Introduction

Bone marrow transplantation is used to treat a variety of hematological disorders either neoplastic or non-neoplastic. Both, these primary disorders and aforementioned treatment induce profound immunosuppression affecting non-specific and specific immunity including both humoral and cellular effectors mechanisms. As the consequence, there is an increased incidence of different types of infections in the post-transplant period, which have been extensively studied. However, paranasal sinusitis, which is one of the most common infections in general population, has been evaluated only in a few trials. Similarly only incidental reports concern invasive fungal sinusitis, which is typically associated with bone destruction in the affected area. According to a few published papers sinusitis affects approximately 5–44% of all patients in the post-transplantation period, mostly during the early post-transplant phase.^{1–6} There are no well defined risk factors of acute sinusitis and flare ups of chronic sinusitis in hematopoietic stem cell transplant recipients.

Pretransplant sinus disease assessment by CT scans has become standard practice in majority of transplant centers, however, only limited data exist^{3,7–9} on the impact of pretransplant sinus disease assessed by CT scans on the post-transplantation morbidity and mortality with two studies limited to children.^{10,11} No guidelines concerning treatment of chronic sinusitis prior to allogeneic bone marrow transplantation exist, although earlier studies advocated aggressive surgical intervention.¹²

Therefore, we decided to review the data on sinus disease in available literature in relation to the bone marrow transplantation.

Data sources and review methods

We have performed searches of PubMed, EMBASE and Scielo database using key words: sinusitis, sinus disease, hematopoietic stem cell transplantation, bone marrow transplantation, invasive fungal sinusitis and identified 25 studies assessing sinusitis in bone marrow transplant recipients. All research were non-experimental and descriptive with III category of evidence.¹³

Study population, type of stem cell transplantation

The majority of the reviewed studies were performed in the late 1980's and 1990's. The number of analyzed patients ranged between 31 and 955 (Table 1). The type of analysis differed between studies. While some researchers analyzed the entire population of the transplanted patients,^{1,3,4,14–16} some analyzed solely patients who developed sinusitis or patients for whom CT scans were available and the exact number of transplanted patients from whom they have been selected remains unknown.^{2,17} Analyzed groups contained both allogeneic and autologous hematopoietic stem cell transplants recipients. Chronic myelogenous

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