

and, in an effort to improve patient care, are seeking procedures aimed at earlier or faster diagnosis.

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BONE MARROW ASPIRATION: COST ANALYSIS OVER 12 YEARS IN BRAZIL

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Introduction: Bone Marrow Aspiration (BMA) is used for the diagnosis of oncological diseases affecting blood components, such as myeloproliferative disorders. Nowadays, BMA is considered a high-cost procedure, reaching total values of R\$215,000 in 2012. Given the complexity of the procedure and its importance for patient care, understanding the costs incurred in the public health system can help professionals recommend the tests at the appropriate time and under suitable circumstances. **Objectives:** To analyze the presented and approved costs for Bone Marrow Aspiration (BMA) procedures in Brazil over a 12-year period. **Methodology:** This is a descriptive-analytical study based on data from the “Tabnet” platform. The data were obtained through a careful process, detailed as follows: The “Tabnet” platform was accessed through DATASUS, followed by selecting the “Health Assistance” axis and the “Ambulatory Production (SIA/SUS)” topic using the “by place of care - from 2008” option, and restricting to “Geographic Coverage”, then to “Brazil and Region by Federal Unit”. Data on “approved values” and “presented values” were extracted for the period 2012-2023 and limited to the “Bone Marrow Aspiration” procedure. Monetary values were adjusted using the General Market Price Index (IGP-M). **Results:** Initially, it was observed that the total forecasted cost for the procedure over the study period was R\$2,505,235.58, with an allocation of R\$2,425,516.12 (97%). When dividing the period into three four-year segments and calculating their respective averages, it was found that in the first segment (2012-2015), the presented value was R\$213,661.87, with R\$209,356.43 (98%) used for the procedures. In the second four-year period (2016-2019), the presented values were R\$199,477.95, with approvals reaching R\$195,793.30 (98%). In the third four-year period, the total requested was R\$213,407.86, while the allocation was R\$204,965.23 (96%). Additionally, it was observed that between the first and second four-year periods, there was a reduction in the presented values by R\$14,183.92 (6.7%), and approved values fell by R\$13,563.13 (6.5%).

Conversely, between the second and third four-year periods, there was an increase in both the presented and approved amounts, respectively, by R\$13,929.91 (7%) and R\$9,171.94 (5%). **Discussion:** At first glance, it is evident that over the 12-year period analyzed, there was a substantial investment in maintaining and performing the procedure. These expenditures, exceeding 95% of the forecasted costs for requests throughout the period, indicate that the Ministry of Health (MS) recognizes the importance of the procedure for the prognosis of patients with myeloproliferative diseases. Additionally, there is a minimal reduction in the costs related to the procedure, typically less than 8%. This fact simultaneously reinforces the previous observation, highlighting the importance that the State places on this particular procedure. **Conclusion:** In conclusion, it was analyzed that over the 12-year period studied, the presented and approved costs for Bone Marrow Aspiration (BMA) reached a substantial level, demonstrating that despite the complexity of the procedure, the Unified Health System (SUS) invests in providing it to patients, ultimately aiming for diagnostic accuracy and treatment of the disease.

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APLICAÇÃO DE INTELIGÊNCIA ARTIFICIAL NA DETECÇÃO DE PLASMÓCITOS EM DADOS DE IMUNOFENOTIPAGEM POR CITOMETRIA DE FLUXO

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Objetivo: Desenvolver um algoritmo baseado em dados de imunofenotipagem por citometria de fluxo, utilizando um painel específico para detecção de plasmócitos anômalos, com a capacidade de identificá-los em amostras clínicas. **Métodos:** Foram utilizados dados de imunofenotipagem por citometria de fluxo de 19 casos com plasmócitos de fenótipo normal e 69 casos com anomalias fenotípicas plasmocitárias. As expressões dos seguintes marcadores foram avaliadas: CD19, CD20, CD38, CD45, CD56, CD117, CD138, CD200, HLA-DR, cKappa, cLambda. O algoritmo foi treinado para reconhecer as características específicas dos plasmócitos, considerando a heterogeneidade dos casos analisados e a referência das populações normais. A análise foi realizada no R e RStudio, com processamento extensivo dos dados, iniciando pela leitura através do pacote flowCore, com isolamento das populações plasmocitárias com base nos marcadores CD38 e CD138, seguido de clustering através do FlowSOM e estudos para avaliação da heterogeneidade e definição das populações plasmocitárias. Por fim, um modelo de machine learning