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PERfiL MICROBIOLÓGICO DE INFECÇÕES DE CATETER VENOSO CENTRAL EM PACIENTES ONCOHEMATOLÓGICOS INTERNADOS NA ENFERMARIA DE UM HOSPITAL DE REFERÊNCIA DE PERNAMBUCO

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Introdução: Define-se como Infecção Relacionada à Assistência à Saúde como toda aquela que acomete indivíduos em instituições hospitalares ou em atendimentos ambulatoriais como hospital dia ou em domicílio que possa estar relacionada a algum procedimento assistencial, terapêutico ou diagnóstico. Pode ser classificada de acordo com o foco infeccioso, quando há presença de um ou mais microrganismos na corrente sanguínea, sendo identificada em hemoculturas. **Objetivos:** Este trabalho tem como objetivo avaliar a presença de microrganismos em hemoculturas e culturas de ponta de cateter coletadas em pacientes onco- hematológicos. **Material e métodos:** Trata-se de um estudo epidemiológico, descritivo e retrospectivo, realizado no Hospital de Câncer de Pernambuco. Utilizou-se a base de dados de 30 notificações de culturas positivas de pacientes internados na enfermaria de oncohematologia entre abril a dezembro de 2022. A coleta de dados ocorreu pelo Controle de Infecção Hospitalar a partir das fichas de notificações e registros de prontuários. **Resultados:** Foram avaliados 30 pacientes no total, sendo 9 portadores de Leucemia Linfoide Aguda (LLA), todos em tratamento com HIPERCVAD; 1 paciente com mieloma múltiplo em uso de VDT; 12 pacientes com Leucemia Mieloide Aguda sendo 4 em tratamento com protocolo 3+7, 7 em tratamento de consolidação com HIDAC e 1 paciente com FLAG; além de 8 pacientes com Linfoma Não-Hodgkin (LNH), sendo 1 síndrome de Sézary, 1 síndrome de Richter, 1 NK nasal, 1 LNH de sistema nervoso central, 3 com Linfoma Difuso de Grandes Células B e 1 subtipo não especificado. Dos 30 pacientes, aproximadamente 26,7% dos casos foram colonizados por Escherichia coli, 23,3% por Klebsiella pneumoniae, 23,3% por Pseudomonas aeruginosa, 10% por Staphylococcus epidermidis e 6,6% por Candida parapsilosis. É importante também considerar que havia pacientes com mais de um agente positivo em culturas. Apenas duas culturas de ponta de cateter vieram positivas, em um paciente com síndrome de Sézary com crescimento de Acinetobacter baumanii complex e outro portador de LLA com desenvolvimento de Pseudomonas aeruginosa. O tempo médio de permanência de cateter foi de 19,26 dias, sendo o paciente com menor tempo de 5 dias e o maior de 59 dias. **Discussão e conclusão:** Percebemos que a bactéria mais prevalente em nosso estudo foi a Eschericia coli, condizente com estudos realizados em pacientes oncológicos um hospital público de Montes Claros - MG e em um hospital público do agreste de Pernambuco. Já em outro estudo, realizado em um Hospital Universitário de Pernambuco, o agente infeccioso mais prevalente foi a Klebsiella pneumoniae. Em ordem descrescente, o segundo tipo de bactéria mais prevalente em nosso estudo foram, em mesmo percentual, a Klebsiela pneumoniae e a Pseudomonas aeruginosa. Em comparação a outros estudos, realizados com pacientes oncohematológicos no Norte do país, observa-se semelhança, considerando que as bactérias gram negativas foram as mais prevalentes. Nossos dados correspondem parcialmente aos dados nacionais, o que mostra a necessidade de ter cautela com esses pacientes geralmente com medula em aplasia, ou seja, apresentando sistema imune deprimido e indicação de uso de dispositivos invasivos, o que acrescenta maiores chances de infecções graves e sepse.

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PRIMARY AUTOIMMUNE NEUTROPENIA IN ADULTS: DIAGNOSTIC AND THERAPEUTIC CHALLENGES

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Introduction: Autoimmune neutropenia (AIN) in adults is most commonly secondary to autoimmune diseases, malignancies, infections, or drug exposure. Primary AIN is rare in adults and differs significantly from its pediatric counterpart. In children, AIN typically follows a benign and self-limited course, and resolves spontaneously within two years. In contrast, adult primary AIN tends to have a chronic, relapsing course, with rare spontaneous remissions. Clinical presentations range from asymptomatic neutropenia to severe infections in both populations. Diagnosis is challenging due to the rarity of the condition and the limited availability of specialized assays to detect anti-human neutrophil antigen (HNA) autoantibodies, which are essential for confirming immune-mediated neutropenia. Treatment responses in adults are often variable and transient, requiring individualized management strategies. **Case description:** A 45-year-old woman with hypertension, treated with losartan and hydrochlorothiazide, and a history of two pregnancies, presented with persistent neutropenia over four years. She had a previous COVID-19 infection complicated by otitis media but no other infectious episodes. Initial labs showed absolute neutrophil count (ANC) of $0.05 \times 10^3/\mu$L, with normal vitamin B12, folate, copper levels, and negative infectious screening. Autoimmune testing revealed positive cytoplasmic ANCA (C-ANCA) at 1:320 and strong anti-PR3 positivity, though without clinical or radiologic evidence of vasculitis. Bone marrow biopsy demonstrated hypercellularity with a maturation arrest of the myeloid lineage. Flow cytometry of peripheral blood and

bone marrow was unremarkable. Abdominal imaging revealed splenomegaly measuring 15.6 cm. A diagnostic splenectomy was performed leading to transient improvement of ANC to $1.46 \times 10^3/\mu L$, with relapse within four months. Two short courses of G-CSF were attempted, but discontinued due to diffuse musculoskeletal pain and systemic flu-like symptoms; no blood samples were obtained during therapy, preventing assessment of hematologic response. Anti-HNA assays performed at UNIFESP identified anti-HNA-1b antibodies through granulocyte immunofluorescence (GIFT) and agglutination (GAT) tests. HNA genotyping confirmed the antibody targeted a self-antigen, establishing the diagnosis of primary autoimmune neutropenia. High-dose prednisone (1 mg/kg/day) led to hematological response (ANC $1.02 \times 10^3/\mu L$), but neutropenia recurred after tapering. Despite persistent severe neutropenia, the patient remains asymptomatic, off-treatment, and without infectious complications to date. **Conclusion:** Primary autoimmune neutropenia in adults is a rare and underdiagnosed condition that requires high clinical suspicion and access to specialized laboratory testing for anti-HNA antibodies. Responses to splenectomy, G-CSF, and corticosteroids are often incomplete or transient. Management should be individualized, balancing the severity of neutropenia with clinical symptoms and infection risk. As this case illustrates, profound neutropenia does not always correlate with clinical infections, and observation may be appropriate in asymptomatic patients. This case underscores the need for targeted diagnostics and tailored therapeutic strategies in adult AIN.

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RADIOLABELED HEMATOLOGICAL AND IMMUNE CELLS IN DIAGNOSTIC IMAGING: A QUANTITATIVE ANALYSIS IN THE LITERATURE

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Introduction: Radiolabeling of hematologic and immune cells has revolutionized diagnostic imaging in recent decades, enabling the precise tracking of infectious, inflammatory, autoimmune, and neoplastic processes. With advances in radioisotope production and imaging equipment, nuclear hematology has assumed a central role in nuclear medicine, opening new frontiers for personalized diagnosis and treatment. **Objectives:** To quantitatively evaluate the number of publications reporting the use of radioisotopes in labeling some hematological and immune cells. **Material and methods:** A quantitative analysis of the literature was performed based on the PubMed/Medline database, covering the period from 2015 to 2025, for full papers. The search was conducted by combining descriptors related to the main cell types (such as erythrocytes, leukocytes, macrophages, monocytes, stem cells, and T cells) with the most commonly used radioisotopes (technetium-99m, copper-64, fluorine-18, gallium-68, and zirconium-89). **Discussion and conclusion:** The analysis yielded 1,096 articles. The results show a distinct distribution among the radioisotopes used: technetium-99m (Tc-99m) leads with 46% of publications, followed by fluorine-18 (F-18) with 24%, zirconium-89 (Zr-89) with 16%, gallium-68 (Ga-68) with 9%, and copper-64 (Cu-64) with 6%. When analyzing cell types, leukocytes appear in 25% of publications, macrophages in 21%, stem cells in 18%, erythrocytes in 14%, T cells in 14%, mesenchymal stem cells in 5%, monocytes in 3%, and dendritic cells in 1%. While Tc-99m predominates in most studies, Zr-89 was preferred for T-cell research, with 55 citations compared to only 23 for Tc-99m. The physicochemical characteristics of radioisotopes provide advantages and disadvantages for different types of studies, particularly their half-lives: Ga-68 (68 minutes), F-18 (110 minutes), Tc-99m (6 hours), Cu-64 (12.7 hours), and Zr-89 (3.3 days). The longer half-life of Zr-89 makes it ideal for studies requiring prolonged follow-up, such as monitoring CAR-T cells in immunotherapies. Factors such as cost and availability also significantly influence the choice of radioisotopes, making Tc-99m the radioisotope of choice, since it is the most readily available. From a cellular perspective, radiolabeled leukocytes determine the location of infectious processes, differentiating them from sterile inflammation; labeled macrophages have been used to track inflammation sites in autoimmune diseases such as multiple sclerosis; radiolabeled red blood cells locate hemorrhagic foci; radiolabeled stem cells have been used to assess cell migration, differentiation, and integration in different tissues; and radiolabeled T cells are essential for assessing the distribution of these cells after reinjection into patients. Despite the technical challenges inherent in integrating two complex techniques—the manipulation of blood elements and the use of radioisotopes—cellular radiolabeling has established itself as an indispensable tool for both precise clinical management and the development of new therapies. These findings reinforce the need for continued investment in the development of innovative radiopharmaceuticals and the optimization of imaging techniques, aiming to expand the potential of this area of modern medicine.

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