

tratamento com a equipe multiprofissional. Estas ações conjuntas e centradas no paciente buscam aumentar a expectativa e a qualidade de vida.

<https://doi.org/10.1016/j.htct.2025.104174>

ID - 1762

# PLASMA LIPIDOMICS REVEALS MARKERS OF LEG ULCER IN SICKLE CELL DISEASE – PRELIMINARY RESULTS

SdOG Mateos<sup>a</sup>, MES Abreu<sup>a</sup>, RdAS Sebastião<sup>a</sup>, FCCd Santos<sup>a</sup>, FE Leal<sup>a</sup>, LdM Amorim<sup>b</sup>, D Teles<sup>c</sup>, AR Belisário<sup>d</sup>, EC Sabino<sup>a</sup>, CL Dinardo<sup>e</sup>, ÁAR Silva<sup>a</sup>

<sup>a</sup> Universidade Municipal de São Caetano do Sul (USCS), São Caetano do Sul, SP, Brazil

<sup>b</sup> Instituto Estadual de Hematologia Arthur de Siqueira Cavalcanti (HEMORIO), Rio de Janeiro, RJ, Brazil

<sup>c</sup> Universidade de Pernambuco (UPE), Recife, PE, Brazil

<sup>d</sup> Hemominas, Belo Horizonte, MG, Brazil

<sup>e</sup> Faculdade de Medicina da Universidade de São Paulo (FMUSP), São Paulo, SP, Brazil

**Introduction:** Leg ulcers represent a severe complication of sickle cell disease (SCD), driven by multifactorial pathophysiological mechanisms. The identification of metabolic biomarkers may support clinical risk stratification and therapeutic decision-making. **Objectives:** To investigate the plasma metabolic profile, particularly lipid alterations, associated with the development of leg ulcers in patients with SCD. **Material and methods:** Plasma samples from 129 individuals with SCD were analyzed, including 72 with a history of leg ulcers and 57 controls without lesions. Participants were clinically matched, including for hydroxyurea use. An untargeted lipidomic approach using high-resolution LC-MS was applied. Statistical analyses included t-test, PCA, and SVM to construct and validate a predictive model. **Results:** A total of 57 metabolites were significantly altered, including 51 lipids (glycerophospholipids, fatty acids, and sphingolipids). Patients with leg ulcers showed elevated plasma levels of lysophospholipids (LysoPCs, LysoPEs), fatty acid esters of hydroxy fatty acids (FAHFAs), and oxidized derivatives of polyunsaturated fatty acids. The predictive model achieved an AUC of 0.973, with 94.4% accuracy in the ulcer group and 96.5% in controls. The lipidomic signature suggests persistent oxidative stress, chronic inflammation, and membrane remodeling as key mechanisms in ulcer pathogenesis. **Discussion and conclusion:** This study identified a distinct plasma lipid signature associated with leg ulcer development in SCD. Key biomarkers included lysophospholipids (LysoPC 16:0, 18:2, 22:6; LysoPE 16:0, 18:0), which function as pro-inflammatory mediators and indicate enhanced membrane turnover and phospholipase A2 activation. The elevation of FAHFAs and oxylipins derived from polyunsaturated fatty acids supports a pathophysiological model involving unresolved oxidative

stress and chronic inflammation. These alterations likely reflect an imbalance between vascular injury and compensatory mechanisms, contributing to lesion persistence and recurrence. Additionally, reduced levels of structural phospholipids (e.g., PC, PE, and PS) and sphingolipids (e.g., SM 36:2 and ceramides) suggest membrane instability and endothelial dysfunction. These lipid pathways are closely related to vascular permeability, inflammation, and apoptosis — central components of SCD pathophysiology. The predictive model based on these metabolites demonstrated excellent performance (AUC 0.973), underscoring the potential of plasma lipidomics as a promising tool for risk stratification and clinical decision support in SCD-related cutaneous complications. Our preliminary findings demonstrate that untargeted plasma lipidomics enables the identification of a robust metabolic signature associated with leg ulcer development in SCD. The elevation of lysophospholipids, FAHFAs, and oxylipins, along with the reduction of structural phospholipids and sphingolipids, reflects a systemic environment characterized by chronic inflammation, oxidative stress, and membrane dysfunction. The high predictive accuracy of the identified metabolite panel highlights the translational potential of metabolomics for personalized prognostics and therapeutic strategies in SCD. These findings lay the foundation for future clinical validation and integration of biomarkers into routine care to prevent and manage leg ulcers more effectively. Funding: This work was supported by FINEP (grant number 01.22.0589.00).

<https://doi.org/10.1016/j.htct.2025.104175>

ID – 2707

# PORTADORES DE ANEMIA FALCIFORME COM ACIDENTE VASCULAR CEREBRAL PRÉVIO EM SEGUIMENTO SEM TRANSFUSÃO

TM Rocha, JF Zambianco, LAB Faria, MJF Ramos-Reis, SR Pires, MS Figueiredo

Escola Paulista de Medicina (EPM), Universidade Federal de São Paulo (UNIFESP), São Paulo, SP, Brasil

**Introdução:** Relato de 12 pacientes com anemia falciforme e história de Acidente Vascular Cerebral isquêmico (AVC) prévio que, por diversas razões tiveram seu esquema transfusional suspenso. **Descrição do caso:** Foi realizado um estudo descritivo, retrospectivo e longitudinal com dados de prontuários médicos de 12 pacientes portadores de doença falciforme, acompanhados em um centro de referência na cidade de São Paulo entre 1994 e 2025. A mediana (AIQ) de idade do primeiro AVC foi de 7,5 (5-11) anos. Cinquenta por cento dos pacientes tiveram mais de 1 episódio de AVC, sendo que o número de episódios variou de 2 a 7, e todos os episódios ocorreram durante o período de profilaxia secundária. A mediana (AIQ) de tempo de tratamento transfusional foi de 10,5 (3,5-13,0) anos. Dois pacientes nunca realizaram transfusão profilática e apenas um destes teve um segundo episódio de AVC 24 anos após o primeiro. Quando foram