SARCOPENIA ON ADMISSION PREDICTS AN INCREASED RISK OF GRAFT-VERSUS-HOST DISEASE IN ALLOGENEIC HAEMATOPOIETIC STEM CELL TRANSPLANTATION

Cornago Navascués, Javier[1]; Conejero Villanueva, Nazaret[1]; Dassen Llorca, Carolina[1]; Calderón Sánchez, Cristina[1]; Mahillo Fernández, Ignacio[1]; Pardo Gambarte, Laura[1]; López Lorenzo, José Luis[1]; Crespo Yanguas, Marta[1]; Capellán García, Raquel[1]; Pérez de Camino Gaisse, Begoña[1]; Sánchez Fernández, María Soledad[1]; Iturrate Basarán, Isabel[1]; Caballero Hernáez, Juan Carlos[1]; Pérez Sáenz, María Ángeles[1]; Mata Serna, Raquel[1]; Arquero Portero, Teresa[1]; Miranda Castillo, Carolina[2]; Naya Errea, Daniel[3]; González Arias, Elena[4]; Llamas Sillero, Pilar[1]; Solán Blanco, Laura[1]

[1]Comprehensive Cancer Center Fundación Jiménez Díaz, [2]University Hospital Rey Juan Carlos, [3]University Hospital Infanta Elena, [4]General Hospital of Villalba

Many efforts have been made to identify biomarkers to predict the onset of graft-versus-host disease (GvHD), but with little success in real-world practice. The aim is to identify risk factors for GvHD using parameters from the muscle ultrasound. This is a prospective, multicentre study. A morphofunctional assessment was carried out on admission for 84 adult patients undergoing allo-HSCT between January 2021 and December 2024. The X and Y axes, the area, and muscle contraction in the lower third of the rectus femoris were quantified. Abdominal adipose tissue (AT) was also measured. Acute GvHD: In the overall cohort, a larger X-axis (OR 0.27, p=0.036) and greater contraction (OR 0.08, p=0.002) were associated with a lower risk of acute GvHD. In patients over 60, a lower muscle area (OR 0.33; p=0.022) and myosteatosis (OR 7.58; p=0.024) were associated with this complication. By conditioning regimen type, higher superficial AT (OR 22.5; p=0.04) in patients receiving myeloablative conditioning and a lower Y-axis (p=0.002) in those receiving reduced-intensity conditioning were also associated with a higher incidence of aGvHD. Chronic GvHD: In the overall cohort, a larger area (OR 0.62, p=0.05) and greater muscle contraction (OR 0.19, p=0.026) were associated with a lower risk of chronic GvHD. In women, a larger X-axis (OR 0.09, p=0.029) was associated with a lower risk of chronic GvHD, but a higher AT (OR 8.55, p=0.034) appeared to be a risk factor for its development. In those over 60, high blood pressure (OR 5.17; p=0.022) and myosteatosis on admission (OR 12.5; p=0.035) were associated with a higher incidence of cGvHD. Therefore, using an accessible and non-invasive technique such as muscle ultrasound, we identified sarcopenia as a predictor of acute and chronic GvHD. Implementing prehabilitation with physical exercise and nutritional treatment to increase muscle mass and function would improve outcomes in allo-HSCT.