progression was later in those exposed to azithromycin (median 21 months, range 4-25 months). The median time to cancer progression after exposure to azithromycin was 51 days (range 17-847 days).

Conclusion: Our findings show that recipients of allo-HCT for treatment of AML/MDS or ALL, exposure to azithromycin for BOS or infections is associated with an increased rate of cancer progression.

Table 1

Characteristic	Overall (n = 672)	No Azithromycin (n = 609)	Azithromycin (n = 63)	p-value
Median age (range)	52 (18–73)	52 (18-73)	53 (19-73)	0.6
Donor/Recipient Sex, n (%)				
Female/Male	140 (21)	122 (20)	18 (29)	
Female/Female	112 (17)	103 (17)	9 (14)	0.03
Male/Female	179 (27)	164 (27)	15 (24)	
Male/Male	240 (36)	219 (36)	21 (33)	
Missing	1 (0)	1 (0)	0 (0)	
Underlying Malignancy, n (%)				
AML/MDS	327 (49)	295 (48)	32 (51)	
ALL	91 (14)	85 (14)	6 (10)	
NHL	126 (19)	115 (19)	11 (17)	0.1
HL	26 (4)	25 (4)	1 (2)	
CLL	64 (10)	59 (10)	5 (8)	
CML/MPD	38 (6)	30 (5)	8 (13)	
Disease at Transplant				
CR1/CR2	291 (43)	260 (43)	31 (49)	0.3
Other	381 (57)	349 (57)	32 (51)	
Donor Type				
Matched related donor	322 (48)	286 (47)	36 (57)	0.1
Matched unrelated donor	328 (49)	301 (49)	27 (43)	
Other	22 (3)	22 (4)	0 (0)	
Conditioning regimen				
Non-myeloablative	208 (31)	193 (32)	15 (24)	0.2
Other	464 (69)	416 (68)	48 (76)	
Cell Source				
Peripheral Blood	512 (76)	459 (75)	53 (84)	0.1
Bone Marrow	160 (24)	150 (25)	10 (16)	
CMV seropositivity				
Donor + / Recipient +	297 (44)	270 (44)	27 (43)	
Donor + / Recipient -	45 (7)	44 (7)	1 (2)	0.1
Donor - / Recipient +	252 (38)	222 (36)	30 (48)	
Donor - / Recipient –	68 (10)	63 (10)	5 (8)	
Missing	10 (1)	10 (1)	0 (0)	

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Biomarkers of Acute Graft-Versus-Host Disease: Surface Antigens and Micro Rnas in Extracellular Vesicles

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Introduction: Biomarkers could be crucial to identify patients at high-risk of acute Graft-vs.-Host Disease (aGVHD). Given their involvement in inflammation, Extracellular Vesicles (EVs) may become attractive biomarkers. Moreover, EVs are non-invasively extracted from body fluids. In a preliminary study, we significantly correlated CD146, CD31 and CD140a expression on EVs membranes with the onset of aGVHD (Lia G. Leukemia 2017).

Objectives: We designed a prospective study to further characterize EVs by their surface antigens and by their content in MicroRNAs.

Methods: EVs are extracted from serum samples at given time-points (pre-transplant, on day 0, 3, 7, 14, 21, 28, 35, 45 and then monthly up to 1 year) by a protamine-based precipitation method and analyzed by flow-cytometry (Guava EasyCyte Flow Cytometer) for the expression of 13 membrane proteins (CD44, CD138, CD146, KRT18, CD120a, CD8, CD30, CD106, CD25, CD31, CD144, CD86, and CD140a). MicroRNAs (miR100, miR92b, miR155, miR194) are extracted from EVs at pre- transplant and on day 0, 7, 14, 28, and quantified by real time PCR as relative quantification compared to healthy donors after cDNA Reverse Transcription. Logistic Regression Analysis is performed for each marker.

Results: Thirty-five transplant patients with hematological diseases have so far been enrolled. Seventeen/35 patients (49%) developed grade II-IV aGVHD. Our preliminary findings show that CD146 (melanoma cell adhesion molecule, MCAM-1) and CD44 (homing-associated *cell adhesion molecule*, H-CAM) were associated with an increased risk of aGVHD (Odds Ratio (OR) 4.3, p=0.008; OR 2.1, p=0.039), whereas CD31 (platelet endothelial cell adhesion molecule, PECAM-1) level was associated with a decreased risk of aGVHD (OR 0.31, p=0.001). Moreover, increased risk of aGVHD was significantly correlated with levels of miR100 (OR 4.66, p=0.004), miR194 (OR 2.2, p=0.01) and miR155 (OR 3.56, p=0.035). Of note, biomarkers associated with aGVHD showed a constant consensual change in signal levels before aGVHD onset **(Figure 1).**

Conclusions: An association of 3 EVs membrane antigens and onset of aGVHD was observed. Of note, CD146, CD44 and CD31 belong to the Cell Adhesion Molecule Family and are critical for endothelium and immune cells interactions. The functional role of miR-194 in GVHD pathogenesis remains to be determined while JAK/STAT and TGFβ pathways were shown to be involved in other studies (Gimondi S Exp Hematol, 2016). MiR-100 has been reported to regulate inflammatory neovascularization during GvHD (Leonhardt F, Blood 2013) while miR-155 drives donor T cell expansion and tissue infiltration (Zitzer N, J Immunol 2018, Ranganathan P Blood 2012).

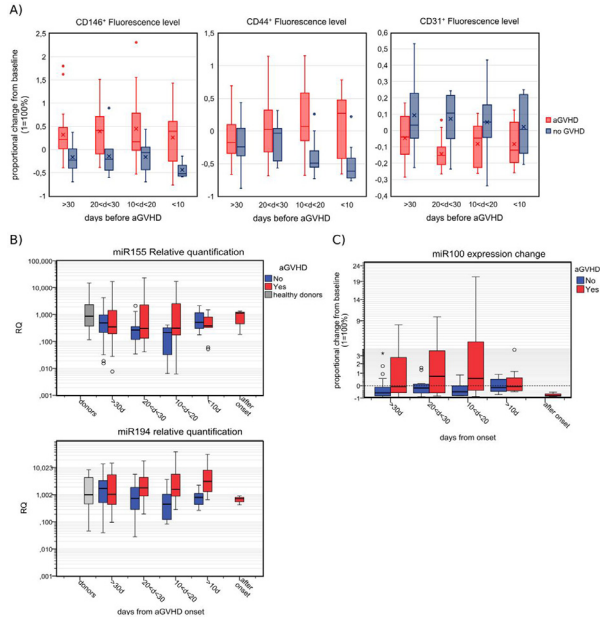

Figure 1. A) CD146, CD44, and CD31 fluorescence level before aGVHD onset; B) MiR155 and miR194 relative quantification compared to healthy donors; C) MiR100 proportional expression change from baseline (preTx).