SAFETY AND EFFICACY OF ELTROMBOPAG IN PATIENTS WITH POST-CAR T CYTOPENIAS: REAL-WORLD EXPERIENCE

William Wesson[1*], Nausheen Ahmed[1*], Aliya Rashid[1], Carine Tabak[1], Emerson Logan[1], Jose Mateo Marchena-Burgos[1], Maggie Nelson[1], James Davis[2], Mary McGann[2], Leyla Shune[1], Marc Hoffmann[1], Al-Ola Abdallah[1], Hamza Hashmi[2]

[1] Division of Hematologic Malignancies & Cellular Therapeutics, University of Kansas Medical Center, Westwood, KS, US; [2] Division of Hematology/Oncology, Medical University of South Carolina, Charleston, SC, US

INTRODUCTION

- Chimeric antigen receptor T-cell (CAR T) therapy often results in cytopenias
- Cytopenias are often prolonged and/or profound
- Mechanism of cytopenia is not completely understood, but is beginning to be elucidated
- Eltrombopag may be an effective therapeutic strategy for management of cytopenias resulting from CAR T

OBJECTIVES

- Describe safety of eltrombopag in management of post CAR T cytopenias
- Describe efficacy of eltrombopag in management of post CAR T cytopenias

METHODS

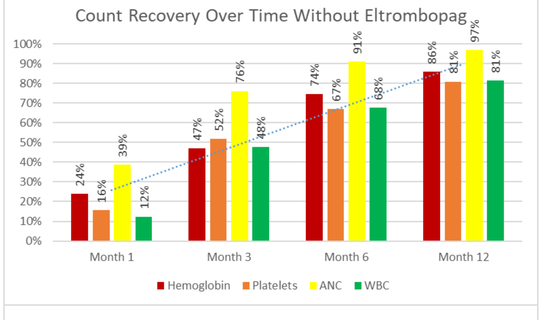
- Retrospective cohort study
- Multicenter patient population – University of Kansas Cancer Center and the Medical University of South Carolina Hollings Cancer Center
- Eltrombopag was used at or after day 21 post CAR T infusion for patients with persistent high-grade leukopenia and/or thrombocytopenia
- A total of 185 lymphoma and myeloma patients received CAR T between Jan 2018 and Jan 2023
- A total of 42 patients subsequently received eltrombopag

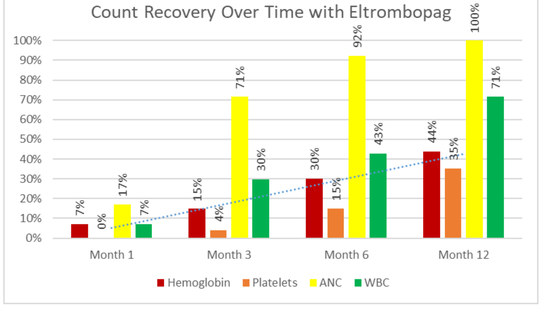
CONCLUSIONS

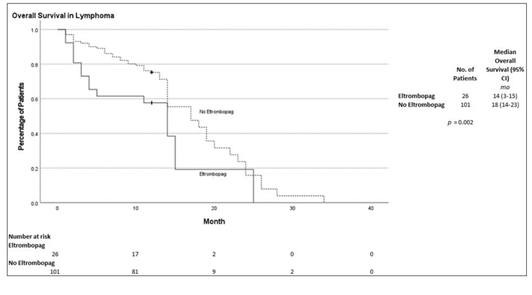
- Eltrombopag appears to be safe and effective, although tempered by worse survival outcomes
- Worse survival outcomes likely are due to pre-infusion risk factors
- A randomized clinical trial will be necessary to definitively demonstrate efficacy of eltrombopag in this population

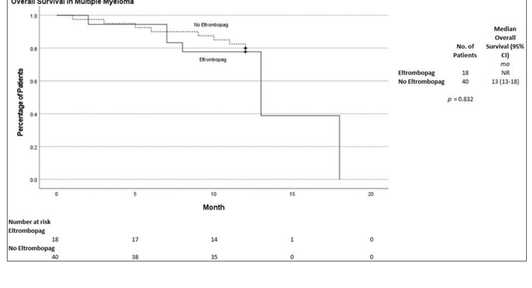
RESULTS

- Majority of patients (63%) experience thrombocytopenia or leukopenia 30 days after CAR T infusion
- Patients who received eltrombopag had numerous pre-infusion risk factors for cytopenias
- Over 90% of patients who received eltrombopag had grade 3 or higher cytopenias at day 30
- Recovery from cytopenias occurred within 180 days for a majority (94%) of patients









n (%)		All patients (n=163)	Received eltrombopag (n=42)	Did not receive eltrombopag (n=121)	*p*-value
Gender					
	Male	90 (55)	21 (50)	69 (57)	0.474
	Female	73 (45)	21 (50)	52 (43)	
Race					
	White	132 (81)	37 (88)	95 (79)	0.222
	Black	25 (15)	3 (7)	22 (18)	
	Other	6 (4)	2 (5)	4 (3)	
Age					
	Median Years (25-75 quartile)	64 (58-70)	62 (58-68)	65 (58-70)	0.371
Disease					
	Lymphoma	110 (67)	24 (57)	86 (71)	0.126
	Myeloma	53 (33)	18 (43)	35 (29)	
Product					
	Axicabtagene Ciloleucel	69 (42)	18 (43)	51 (42)	0.322
	Tisagenlecleucel	19 (12)	4 (10)	15 (12)	
	Lisocabtagene Maraleucel	14 (9)	1 (2)	13 (11)	
	Brexucabtagene Autoleucel	8 (5)	1 (2)	7 (6)	
	Ciltacabtagene Autoleucel	12 (7)	5 (12)	7 (6)	
	Idecabtagene Vicleucel	41 (25)	13 (31)	28 (23)	
Previous Lines of Therapy					
	1-2	76 (47)	16 (38)	60 (50)	0.262
	3-4	30 (18)	7 (17)	23 (19)	
	5+	57 (35)	19 (45)	38 (31)	
Bridging Therapy					
	Yes	124 (76)	37 (88)	87 (72)	**0.037**
	No	39 (24)	5 (12)	34 (28)	
Leukopenia Grade at Lymphodepletion					
	0	72 (44)	12 (29)	60 (50)	**0.025**
	1-2	76 (58)	23 (55)	53 (44)	
	3-4	15 (9)	7 (17)	8 (7)	
Anemia Grade at Lymphodepletion					
	0	46 (28)	6 (14)	40 (33)	**0.005**
	1-2	100 (61)	27 (64)	73 (60)	
	3-4	17 (10)	9 (21)	8 (7)	
Thrombocytopenia Grade at Lymphodepletion					
	0	90 (55)	19 (45)	71 (59)	**0.041**
	1-2	60 (37)	16 (38)	44 (36)	
	3-4	13 (8)	7 (17)	6 (5)	
Median CRP at Lymphodepletion					
	Median (25-75 quartile)	0.8 (0.2-2.1)	0.4 (0.2-2.3)	0.8 (0.2-2.0)	0.478
Median Ferritin at Lymphodepletion					
	Median (25-75 quartile)	316 (123-1100)	741 (60-1710)	288 (130-822)	0.491
Median LDH at Lymphodepletion					
	Median (25-75 quartile)	193 (164-266)	207 (177-288)	191 (164-250)	0.200
ICU Admission					
	Yes	36 (22)	16 (38)	20 (17)	**0.013**
	No	127 (78)	26 (62)	101 (83)	
MDS Post-CAR T					
	Yes	5 (4)	3 (9)	2 (2)	0.164
	No	110 (96)	32 (91)	78 (98)	
Bleeding events					
	Yes	4 (2)	3 (7)	1 (1)	0.053
	No	159 (98)	39 (93)	120 (99)	
Infection					
	Yes	66 (40)	24 (57)	42 (35)	**0.018**
	No	97 (60)	18 (43)	79 (65)	
Received G-CSF					
	Yes	114 (70)	40 (95)	74 (62)	**<0.001**
	No	48 (30)	2 (5)	46 (38)	
Received Stem Cell Boost					
	Yes	15 (9)	9 (21)	6 (5)	**0.003**
	No	148 (91)	33 (79)	115 (95)	
PFS, months		15 (5-19)	13 (3-16)	16 (6-20)	**0.016**
OS, months		17 (13-22)	14 (7-18)	18 (14-23)	**0.013**
PFS for Lymphoma, months		15 (4-20)	8.5 (1.5-15)	17 (6-20)	**0.010**
PFS for Multiple Myeloma, months		16 (6-16)	16 (4-16)	16 (7-16)	0.470
OS for Lymphoma, months		17 (14-23)	14 (3-15)	18 (14-23)	**0.002**
OS for Multiple Myeloma, months		13 (13-18)	13 (13-18)	NR	0.832