

Carfilzomib, Cyclophosphamide, and Dexamethasone (KCd) for the Treatment of triple-class Relapsed/Refractory Multiple Myeloma (RRMM): A Single Institution Experience



Dante Pennipede, Ghulam Rehman Mohyuddin, Ryan Hawkins, Siddhartha Ganguly, Leyla Shune, Nausheen Ahmed, Meera Mohan, Wei Cui, Zahra Mahmoudjafari, Joseph McGuirk, Shebli Atrash, Al-Ola Abdallah



Department of Oncology, University of Kansas School of Medicine, Kansas City, KS, USA

Introduction

Multiple myeloma (MM) is an incurable hematologic malignancy, and outcomes remain poor for patients with relapsed/refractory multiple myeloma (RRMM).¹ No current consensus exists for optimal treatment of RRMM.² Carfilzomib, cyclophosphamide, and dexamethasone (KCd) is a triplet treatment regimen that was shown in the MAMMOTH study to have the longest progression free survival (PFS) in patients with RRMM compared to other existing salvage therapeutic options.³ Descriptive analyses were performed on available data for patient characteristics, disease course, and outcomes of the KCd triplet regimen on heavily pretreated RRMM patients at our institution.

Objective

To evaluate the clinical efficacy and tolerability of KCd in Patients with triple-class relapse/refractory multiple myeloma (RRMM).

Patients and Methods

23 patients with RRMM treated with Carfilzomib, Cyclophosphamide, and dexamethasone (KCd) between July 2007 and September 2020 were included. The regimen KCd consisted of 28-day cycles of biweekly carfilzomib 20/36mg/m² IV with cyclophosphamide 300 mg/m² IV weekly, and dexamethasone (20-40) mg orally weekly.

Results

Among the 23 patients included in the analysis, the median age at the time of receiving KCd was 54 years (range 36-78). Six patients (26%) had IgG isotype, nine patients (39%) had ISS stage III disease at diagnosis, ten patients (43%) had high risk cytogenetics, and twelve patients (52%) had extramedullary disease. Patient demographics are summarized in table 2. Patients received a median of 6 (3-10) prior regimens. The median number of cycles administered was 4 (1-11) cycles. Overall response rate was (52%), 6 patients (26%) achieved very good partial response (VGPR), 6 patients (26%) achieved partial response (PR), and 5 patients (22%) achieved stable disease (SD). Progression-free survival (PFS) and overall-survival (OS) were 3.9 and 11.9 months, respectively. There was no reported treatment-related mortality. The most common grade ≥ 3 adverse events were neutropenia (26%), thrombocytopenia (56.5%), and anemia (56.5%).

Table 1. Treatment response to KCd in RRMM population (n=23).

Response Category	Relapsed/ Relapsed refractory Myeloma
Overall response no (%)	12 (52%)
Complete response or better	0 (0%)
Stringent complete response	0 (0%)
Complete response	0 (0%)
Very good partial response or better	6 (26%)
Very good partial response	6 (26%)
Partial response	6 (26%)
Minimal response	1 (4%)
Stable disease	5 (22%)
Progressive disease	6 (26%)

Table 2. Demographics of the study group (n=23).

Gender, male:female	13:10
Age, years, median (range)	54 (36-78)
Race, no of patients (%)	
Caucasian	16 (70%)
Black	5 (22%)
Hispanic	2 (9%)
MM paraprotein, no. of patients (%)	
IgG	6 (26%)
IgA	15 (65%)
Light Chain	2 (9%)
Baseline ISS stage, no of patients (%)	
Stage III	9 (39%)
Stage II	6 (26%)
Stage I	5 (22%)
Unknown	2 (9%)
Cytogenetics, no of patients (%)	
High risk	10 (43%)
Standard Risk	13 (57%)
Extramedullary disease	12 (52%)
CNS	2 (9%)
Plasmacytoma	10 (43%)
Median no of previous lines of therapy for relapsed refractory multiple myeloma (range)	6 (3-10)
Refractory to PI	23 (100%)
Refractory to IMiD	23 (100%)
Refractory to CD38	23 (100%)
Triple Refractory	23 (100%)
Pentarefractory	15 (65%)
Number of patients who received ASCT	19 (83%)

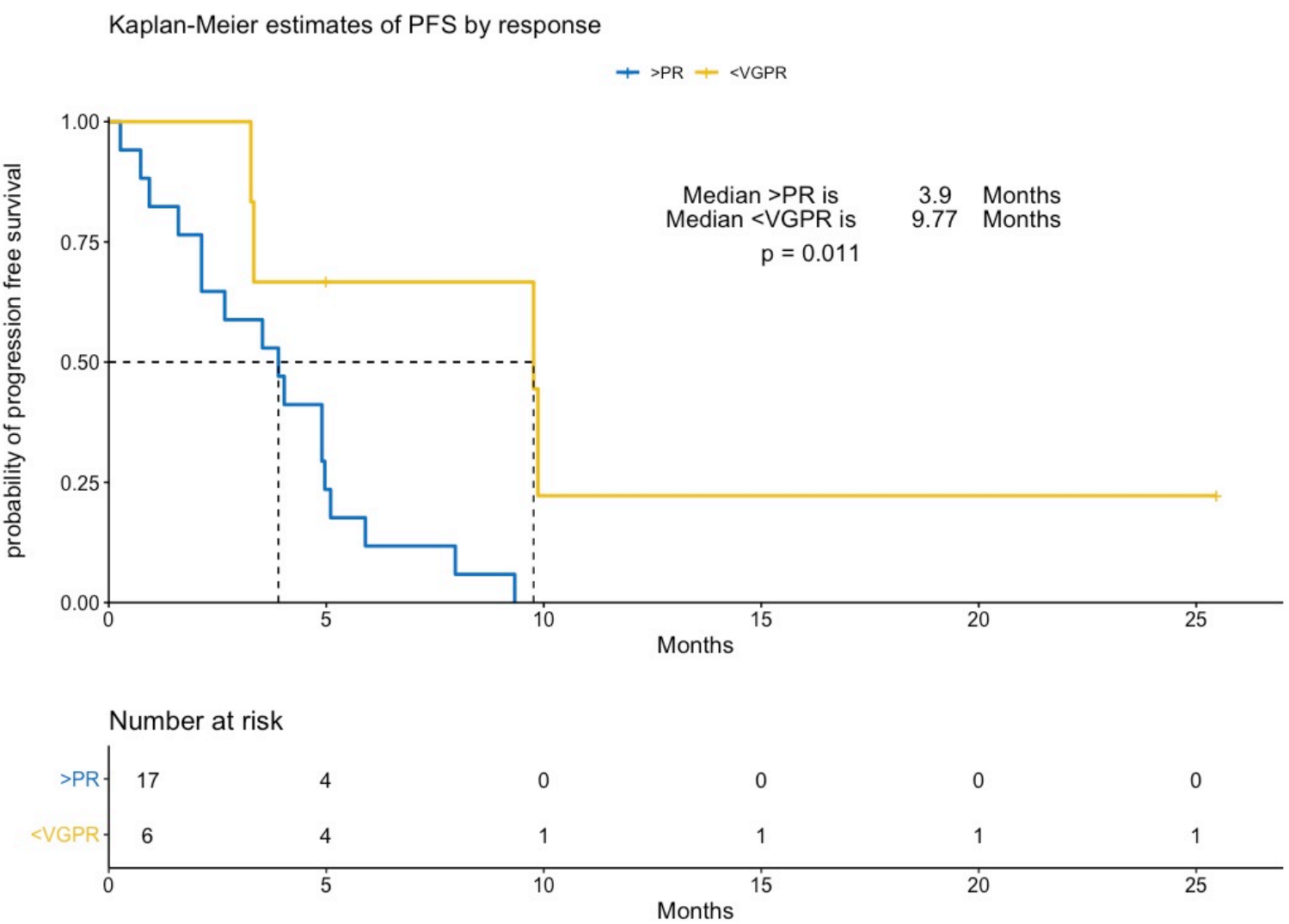


Figure 1. Kaplan Meyer Curve Progression Free Survival for RRMM population treated with KCd (median = 3.9 months).

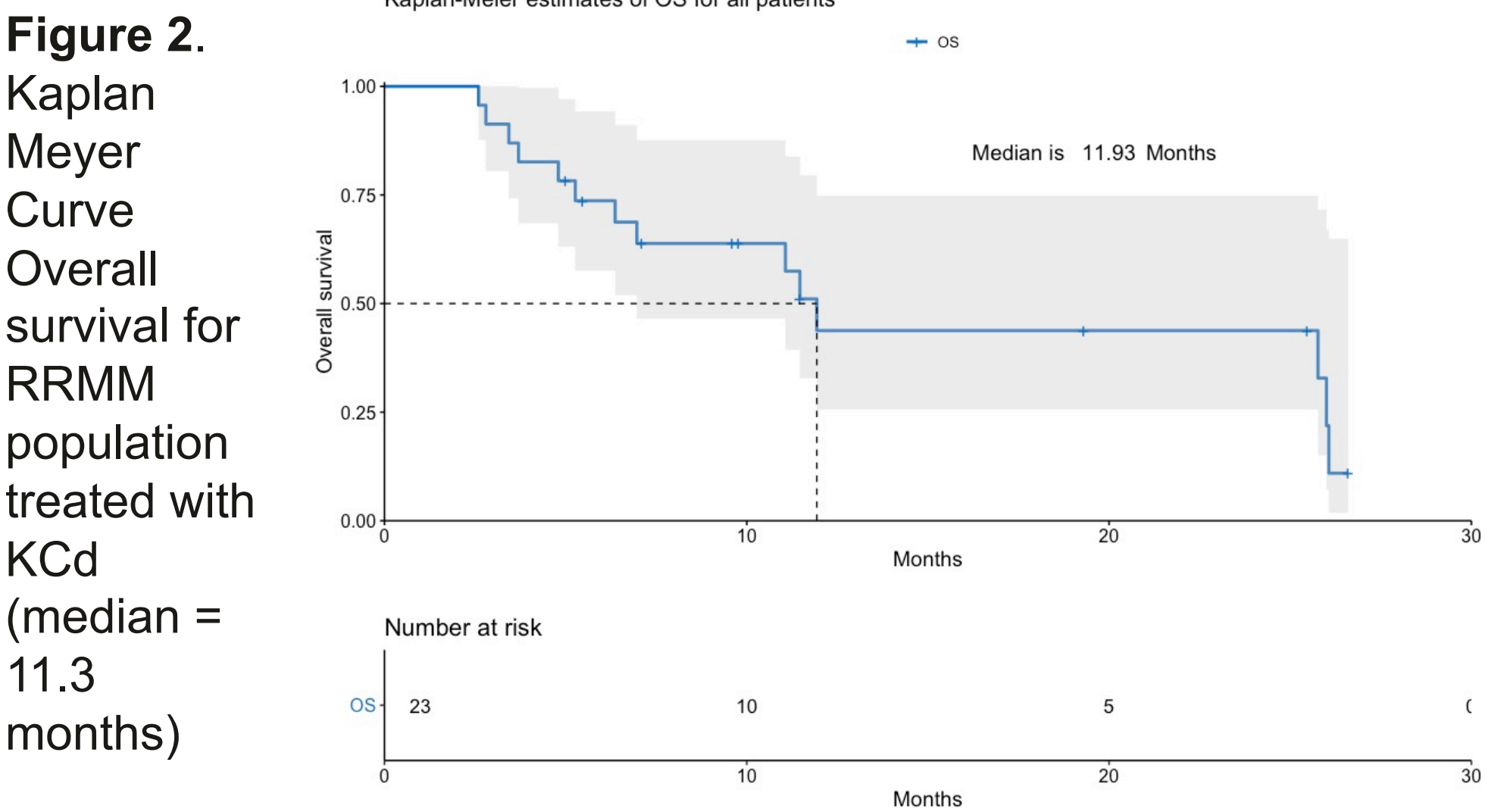


Figure 2. Kaplan Meyer Curve Overall survival for RRMM population treated with KCd (median = 11.3 months)

Conclusions

KCd showed clinically meaningful efficacy and a manageable safety profile in real-world patients with triple-class RRMM in real-world.

References

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