RESULTS FROM THE MYRIAM REGISTRY

CHANGES IN ROUTINE CARE TREATMENT OF PATIENTS WITH MULTIPLE MYELOMA IN GERMANY

MYRIAM
Myeloma Registry Platform

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INTRODUCTION

Over the last decade the approval of several novel drugs has broadened therapeutic options for patients with multiple myeloma (MM). Increasingly, albeit only gradually, “real world” data are being generated, especially regarding the use of novel therapies in routine practice and their impact on the prognosis of patients outside clinical trial treatment (Knauf et. al., 2014, 2018; Gengenbach et al., 2018). MYRIAM is a prospective, non-interventional, intersectoral, national, multicentre cohort study that documents patient characteristics, treatment, clinical and patient-reported outcomes (PROs) of MM patients in Germany.

CONCLUSION

Within two years, MYRIAM already reveals the changing dynamics in the choice of routine treatments for patients with MM across all health care sectors in Germany. Our results show that new insight from clinical studies is quickly implemented into daily practice. Future analysis with longer follow-up will explore the impact of new treatments on clinical and patient-reported outcomes in routine care. Changes in the revised myeloma comorbidity index between start of first- and second-line will also be explored.

PATIENTS AND METHODS

- 2.000 patients with MM will be recruited in 150 sites in Germany between 2017 and 2021.
- German university/community hospitals, office-based practices are participating.
- Patients are starting 1st or 2nd systemic line of treatment.
- Patients will be followed for a maximum of 5 years.
- Data are collected in electronic case report forms, regularly examined by data managers and randomly monitored.
- PROs are longitudinally assessed using the EORTC QLQ-C30+MY20 and Brief Pain Inventory questionnaire.
- Patients are asked to give additional informed consent for future translational research of their dispensable bone marrow aspirates and -biopsies.
- The study was approved by local ethics committees and is registered at clinicaltrials.gov (identifier: NCT03308474).
- Data from the 3rd interim analysis (database cut 30/04/2020) are presented.

Definition of regimens and treatment protocols

In MYRIAM all drugs given are documented individually not as pre-defined protocols, and treatment regimens are coded prior to analyses. This allows analyses of frequencies of drugs independent of the regimen used (e.g. CARF) as well as of specific regimens (e.g. Kd) or treatment protocols (e.g. CARF-protocols). For the analysis of treatment protocols the coded regimens were grouped according to the following rule:

1. daratumumab-containing,
2. elotuzumab-containing,
3. carfilzomib-containing,
4. bortezomib-containing but no daratumumab,
5. ixazomib-containing,
6. alkylating agents-containing [cyclophosphamide, bendamustine, non-HD-melphalan],
7. immunomodulating agents-containing [pomalidomide, lenalidomide, thalidomide] but not in combination with the previously listed drugs.

This protocol classification follows GMMG/DSMM expert standards.

RESULTS

At database cut, datasets of 987 patients (enrolled by 118 sites) were eligible for analysis, of whom 780 patients had been enrolled at 1-line treatment.

Non-SCT vs. SCT as first-line therapy

64% of patients (n=496) were not eligible for stem cell transplantation (hereafter named non-SCT group): Characteristics at start of treatment are shown in table 1.

Patients in the non-SCT group were older compared to patients eligible for SCT (median 78 vs. 64 years) at start of treatment, and in poorer overall condition (20% vs. 45% had ECOG 0, 91% vs. 70% had comorbidities, mainly hypertension (59% vs. 34%), diabetes (21% vs. 8%) and/or renal insufficiency 19% vs. 6%, respectively).

Non-SCT first-line therapy

Of all 1-line non-SCT treatments (n=495; one treatment missing due to missing documentation), 35 started in 2017, 175 in 2018, 221 in 2019 and 64 in 2020. The use of DARA-containing treatments (DARA-protocol, n=81) increased from 3% (n=1) in 2017 and 7% (n=13) in 2018 to 42% (n=27) in 2020, while the use of bortezomib-based treatments (BOR-protocols, no DARA, n=314) decreased from 80% (n=28) in 2017 to 44% (n=28) in 2020 and the use of protocols with immunomodulatory drugs (IMiD) alone (no BOR, no DARA, n=91) remained unchanged at 14% (n=5) and 13% (n=8), respectively (Figure 1).

Overall, regardless of the assigned regimen, BOR was applied in 75% (370/495 patients), mostly as BOR|dexamethasone (VD): 22%, LENA in 31% (154/495 patients), mostly as Rd: 14% and DARA in 16% (81/495 patients), mostly as Dara-VMP: 4% of cases.

Non-SCT second-line therapy

Of all 2-line non-SCT treatments (n=299), 18 started in 2017, 100 in 2018, 150 in 2019 and 31 in 2020. The use of DARA-protocols increased from 0% to 32% (n=10) from 2017 to 2020, while the use of carfilzomib (CARF)-protocols or IMiDs alone (no DARA, no CARF) decreased from 44% (n=8) to 16% (n=5) and from 44% (n=8) to 19% (n=6), respectively (Figure 2).

Overall, regardless of the assigned regimen, LENA was applied in 55% (163/299 patients), DARA in 31% (92/299 patients), and BOR and CARF both in 23% (69/299 and 68/299, respectively). The most frequently applied combinations were Rd (15%), Dara-Rd (12%), Kd (9%), VD and KRd (each 8%).

At the time of database cut, treatment for the majority of patients was ongoing.

Table 1

	First-line therapy	First-line therapy	Second-line therapy
	Non-SCT	SCT	Non-SCT
Patients (N)	496	284	299
Male sex n (%)	277 (55.8%)	162 (57.0%)	155 (51.8%)
Female sex n (%)	219 (44.2%)	122 (43.0%)	144 (48.2%)
Age at start of respective line of therapy			
Mean ± standard deviation (years)	76.4 ±7.51	62.0 ± 8.78	73.5 ± 9.89
Median (years)	77.7	63.7	76.0
≥ 65 years n (%)	460 (92.7%)	122 (43.0%)	237 (79.3%)
ECOG performance status			
ECOG 0 n (%)	100 (20.2%)	129 (45.4%)	64 (21.4%)
ECOG 1 n (%)	202 (40.7%)	101 (35.6%)	129 (43.1%)
ECOG ≥2 n (%)	93 (18.8%)	15 (5.3%)	39 (13.0%)
ECOG unknown / missing n (%)	101 (20.4%)	39 (13.7%)	67 (22.4%)
Concomitant disease(s) present			
Yes n (%)	449 (90.5%)	200 (70.4%)	240 (80.3%)
No n (%)	45 (9.1%)	84 (29.6%)	35 (11.7%)
Missing n (%)	2 (0.4%)	0 (0.0%)	24 (8.0%)
Arterial hypertension n (%)	293 (59.1%)	96 (33.8%)	148 (49.5%)
Diabetes mellitus n (%)	104 (21.0%)	23 (8.1%)	42 (14.0%)
Renal insufficiency n (%)	96 (19.4%)	17 (6.0%)	41 (13.7%)
Polyneuropathy n (%)	16 (3.2%)	5 (1.8%)	20 (6.7%)
Pathological bone fractures	37 (7.5%)	18 (6.3%)	17 (5.7%)
Charlson co-morbidity index (CCI)			
CCI 0 n (%)	316 (63.7%)	224 (78.9%)	191 (63.9%)
CCI 1 n (%)	74 (14.9%)	29 (10.2%)	37 (12.4%)
CCI ≥2 n (%)	104 (21.0%)	31 (10.9%)	47 (15.7%)
CCI unknown / missing n (%)	2 (0.4%)	0 (0.0%)	24 (8.0%)

Table 1 Patient characteristics

Figure 1

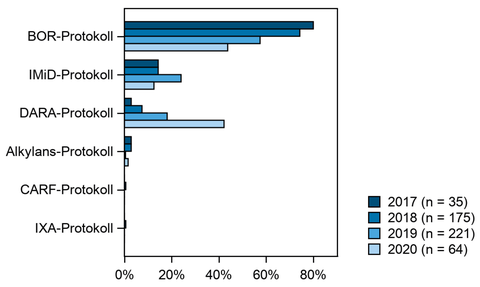

Figure 1: Non-SCT first-line treatment over time (n=495)

Figure 2

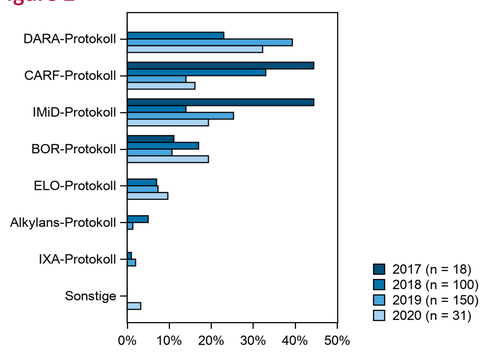

Figure 2: Non-SCT second-line treatment over time (n=299)

Abbrevations:
DSMM: Deutsche Studiengruppe (German Study Group) Multiples Myelom | ECOG: Eastern Cooperative Oncology Group | GMMG: German Multiple Myeloma Group | IMiD: imunomodulatory drug | MM: multiple myeloma | PI: proteasome inhibitor | PRO: Patient-reported outcomes | SCT: stem cell transplantation.

BOR: bortezomib | CARF: carfilzomib | DARA: daratumumab | Dexa: dexamethasone | ELO: elotuzumab | IXA: ixazomib | LENA: lenalidomide | POM: pomalidomide | THAL: thalidomide.

Kd: carfilzomib (Kyprolis) + dexamethasone | KRd: carfilzomib (Kyprolis)+ lenalidomide (Revlimid) dexamethasone | Rd: lenalidomide (Revlimid) + dexamethasone VD: bortezomib (Velcade) + dexamethasone | VMP: bortezomib (Velcade) + melphalane + prednis(o)ne.

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Conflicts of interest, general
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Conflicts of interest:
M. Engelhardt: Honorare: BMS, Amgen, Janssen, Takeda

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