Health Care Resource Utilization Patterns in Finnish Multiple Myeloma Patients: a Population-based Cohort Study

#RWD20

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INTRODUCTION

Multiple Myeloma (MM) is a type of blood cancer that develops in plasma cells in the bone marrow and is generally considered incurable. Northern Europe is associated with a high incidence of MM with an estimated age-standardized incidence of 3 cases per 100,000 in 2005–2016 in Finland [1]. MM is more prevalent in the older population with a median age at diagnosis being 65–70 years [2] .

OBJECTIVES

The aim of this study was to estimate the health care resource utilization (HCRU) among Finnish Multiple Myeloma (MM) patients, and to recognize potential resource utilization patterns over time.

METHODS

- A population-based cohort study was conducted of Finnish patients newly diagnosed with MM (ICD-10:C90.0) between 1.1.2015 and 31.12.2019 and followed from the first diagnosis until the end of the study period (31.12.2020).
- Data from The Finnish Institute for Health and Welfare (THL) registries was collected and analysed for all healthcare events including visits, inpatient stays, and other contacts.
- THL Primary care (PC) register (AvoHILMO) was sourced for diagnoses and health care contacts in primary healthcare and THL Specialty care (SC) register (HILMO) was sourced for data on diagnoses and health care contacts in primary healthcare.
- To recognize HCRU patterns, resource utilization per patient-year (ppy) was grouped by years (1-5) since diagnosis. Additionally, HCRU was examined one year and 6 months prior to death, and from the start of palliative care to death.

RESULTS

HCRU patterns over time

- In total, 1615 patients with 4468 patient years of follow-up were identified (Table 1).
- During the study period patients had on average 95.3 healthcare events ppy
- 62.0% of total healthcare events were PC events and 27.9% were MM specific.
- During the study period patients had on average 26.6 MM specific events ppy and majority of these events (93.6%) were in SC.
- The share of MM specific inpatient days of total events period was higher in PC (11.8%) compared to SC (3.6%)
- HCRU tended to be higher during the first year after diagnosis than during the following four years.

End-of-Life HCRU

- 417 and 505 patients could be followed for 1 year and 6 months before death, respectively for the End-of-Life HCRU analysis (Table 2).
- HCRU was most intense during the last months of life. Patients had on average 199.2 and 179.6 healthcare events ppy 6 months and 1 year before death, of which 75.5% and 76.1%, respectively were PC events and 17.1% and 18.4% were MM specific.

HCRU between initiation of palliative care and death

- 145 MM patients received palliative care before death (Table 2).
- Between the initiation of the palliative care and death, patients had on average 222.3 healthcare events/py with 86.0% being PC events and 11.1% MM specific.
- The share of MM specific PC inpatient days appeared to increase during palliative care and before death.

DISCLOSURES

- The study was sponsored by Pfizer.
- JR, TP, PR, and AK are employees of Oriola Finland Oy, which received funding from Pfizer Oy in connection with the development of this abstract/poster

Table 1. HCRU grouped in years (1-5) and total study period since diagnosis (A=patient population and patient years; B=All cause events in PC and SC; C=MM specific events in PC and SC; D=distribution of PC, SC and MM specific events)

A	0-1	1-2	2-3	3-4	4-5	Study period
Number of patients	1615	1454	1010	653	383	1615
Patient years	1541	1225	833	520	268	4468

B	0-1	1-2	2-3	3-4	4-5	Study period
PC events; all cause ppy	65,2	59,9	51,1	53,1	58,8	59,0
Visits %	*86,2 %*	*86,8 %*	*84,9 %*	*83,2 %*	*87,1 %*	*85,9 %*
Inpatient days %	*0,9 %*	*0,5 %*	*0,6 %*	*0,6 %*	*0,3 %*	*0,7 %*
Other events %	*12,9 %*	*12,7 %*	*14,5 %*	*16,2 %*	*12,6 %*	*13,4 %*
SC events; all cause ppy	51,4	29,4	26,5	29	29	36,3
Emrgency visits %	*3,3 %*	*3,1 %*	*2,6 %*	*1,7 %*	*1,0 %*	*3,0 %*
Inpatient days %	*6,8 %*	*3,4 %*	*3,4 %*	*1,7 %*	*1,4 %*	*4,7 %*
Other visits %*	*89,9 %*	*93,5 %*	*94,0 %*	*96,6 %*	*97,6 %*	*92,3 %*
Total all cause events ppy	**116,6**	**89,3**	**77,6**	**82,1**	**87,8**	**95,3**

** includes also visits where contact type could not be specified from data*

C	0-1	1-2	2-3	3-4	4-5	Study period
PC events; MM Spesific ppy	2,2	1,3	2	1,5	1,1	1,7
Visits	*77,3 %*	*76,9 %*	*85,0 %*	*86,7 %*	*81,8 %*	*82,4 %*
Inpatient days	*18,2 %*	*7,7 %*	*10,0 %*	*6,7 %*	*9,1 %*	*11,8 %*
Other events	*4,5 %*	*15,4 %*	*5,0 %*	*6,7 %*	*9,1 %*	*5,9 %*
SC events; MM Spesific ppy	36,4	19,9	17,4	19,2	18,5	24,9
Emrgency visits	*0,8 %*	*0,5 %*	*0,6 %*	*0,5 %*	*0,0 %*	*0,8 %*
Inpatient days	*6,0 %*	*2,0 %*	*1,7 %*	*1,0 %*	*0,5 %*	*3,6 %*
*Other visits**	*93,1 %*	*97,5 %*	*97,7 %*	*98,4 %*	*99,5 %*	*95,6 %*
Total MM spesific events ppy	**38,6**	**21,2**	**19,4**	**20,7**	**19,6**	**26,6**

** includes also visits where contact type could not be specified from data*

D	0-1	1-2	2-3	3-4	4-5	Study period
PC % of all events	55,9 %	67,1 %	65,9 %	64,7 %	67,0 %	61,9 %
SC % of all events	44,1 %	32,9 %	34,1 %	35,3 %	33,0 %	38,1 %
MM spesific % of all events	33,1 %	23,7 %	25,0 %	25,2 %	22,3 %	27,9 %
PC % of MM spesific events	5,7 %	6,1 %	10,3 %	7,2 %	5,6 %	6,4 %
SC % of MM spesific events	94,3 %	93,9 %	89,7 %	92,8 %	94,4 %	93,6 %

Table 2. HCRU half year and one year before death and from palliative care to death (A=patient population and patient years; B=All cause events in PC and SC; C=MM specific events in PC and SC; D=distribution of PC, SC and MM specific events)

A	Half year before death	One year before death	From Palliative care to death
Number of patients	505	417	145
Patient years	253	417	31

B	Half year before death	One year before death	From Palliative care to death
PC events; all cause ppy	150,3	136,7	191,4
Visits %	*86,2 %*	*88,3 %*	*83,1 %*
Inpatient days %	*1,5 %*	*1,1 %*	*2,7 %*
Other events %	*12,3 %*	*10,6 %*	*14,2 %*
SC events; all cause ppy	48,8	43,0	30,9
Emrgency visits %	*5,7 %*	*5,1 %*	*7,8 %*
Inpatient days %	*8,0 %*	*6,5 %*	*9,1 %*
Other visits %*	*86,3 %*	*88,4 %*	*83,2 %*
Total all cause events ppy	**199,1**	**179,7**	**222,3**

** includes also visits where contact type could not be specified from data*

C	Half year before death	One year before death	From Palliative care to death
PC events; MM Spesific ppy	4,7	5,2	7,6
Visits	*70,2 %*	*80,8 %*	*47,4 %*
Inpatient days	*25,5 %*	*15,4 %*	*50,0 %*
Other events	*4,3 %*	*3,8 %*	*2,6 %*
SC events; MM Spesific ppy	29,5	27,9	16,9
Emrgency visits	*2,0 %*	*1,4 %*	*3,0 %*
Inpatient days	*6,4 %*	*4,7 %*	*8,9 %*
*Other visits**	*91,5 %*	*93,9 %*	*88,2 %*
Total MM spesific events ppy	**34,2**	**33,1**	**24,5**

** includes also visits where contact type could not be specified from data*

D	Half year before death	One year before death	From Palliative care to death
PC % of all events	75,5 %	76,1 %	86,1 %
SC % of all events	24,5 %	23,9 %	13,9 %
MM spesific % of all events	17,2 %	18,4 %	11,0 %
PC % of MM spesific events	13,7 %	15,7 %	31,0 %
SC % of MM spesific events	86,3 %	84,3 %	69,0 %

CONCLUSIONS

To our knowledge, this is the first comprehensive nationwide study from Finnish national healthcare registries to assess the total and MM specific HCRU of MM patients. The distribution of healthcare events to primary and specialty care, utilization patterns over time, and end-of-life costs haven't been assessed previously either. Multiple myeloma imposes a significant burden in primary care and specialty care in Finland. The total HCRU increases towards the end of patients' life and the focus shifts to primary care setting. The focus on PC could be explained with patients´ high age and a possible increased need for home care. The results of this analysis can be used to inform decision makers in hospitals and HTA bodies on real life HCRU associated to patients with Multiple Myeloma.

REFERENCES

1) Toppila I, Miettinen T, Lassenius MI, et al (2021) Characteristics and survival trends in Finnish multiple myeloma patients-a nationwide real-world evidence study. Ann Hematol 100:1779–1787. **2)** Marjaana Säily, Raija Silvennoinen, Esa Jantunen, et al (2019) Monimuotoinen myelooma. Duodecim 135:1171–1179.