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Comorbidities, polypharmacy and potentially inappropriate medication in elderly patients treated for multiple myeloma

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Introduction

Potentially Inappropriate Medications (PIM) can increase adverse drug events incidence. Elderly patients are particularly at risk because of several comorbidities requiring pharmacotherapy. The prevalence of polypharmacy in older adults with cancer ranges from 13% to 92%, depending on polypharmacy definition and the population characteristics. There is no data about patients with myeloma. Adding cancer related therapy increase this risk.
In Multiple Myeloma, renal insufficiency is frequent and increase adverse events risk.
In patients with therapeutic indication, the overall 5-year survival has increased significantly with new targeted therapies also in the elderly. When patients are ineligible for transplantation, the standard treatment is a combination therapy based on melphalan and prednisone plus bortezomib (VMP) or thalidomide (MPT). Toxicities are common (30-40% of patients in early treatment).

Objective

The aim of this study is to evaluate comorbidities, polypharmacy and PIM prevalences in elderly people treated for multiple myeloma.

Methods

- Retrospective study from january 1st to december 31[th]2013 in haematology unit of Caen University Hospital
- Including consecutive patients ≥70 years for whom a treatment has been introduced for multiple myeloma (oral or parenteral treatment in daily hospitalization)
- Polypharmacy (≥5 daily differents medications before introducing chemotherapy), PIM (Independent and Considering Diagnosis Medications to avoid in 2012 version Beers list), renal insufficiency, serum albumin, comorbidity (Charlson Comorbidity Index and kind of comorbidity) were collected.
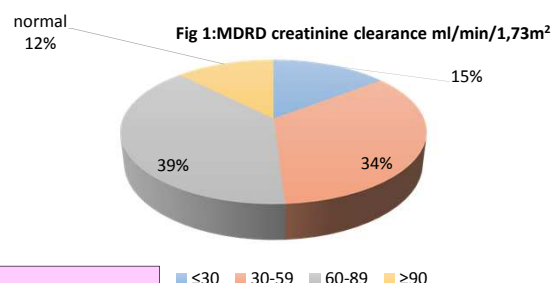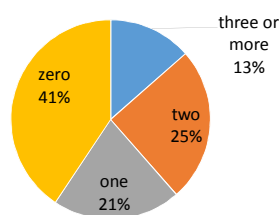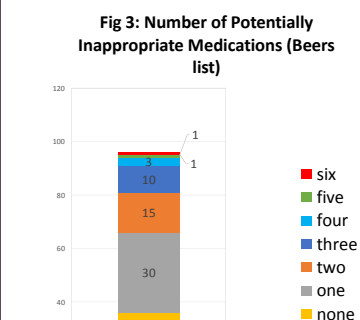

Fig 1:MDRD creatinine clearance ml/min/1,73m^2

normal 12% — 15% — 34% — 39%

■ ≤30 ■ 30-59 ■ 60-89 ■ ≥90

Results

- **96 patients** were included: mean age was **77,7 years** [70-92], median age 76,5, with no difference between sex, 34 were 80 years old and over, 48 women.
- Creatinine clearance: **49 % of patients < 60 ml/min/1,73m²** (vs 30,8% in a 60 years median age population study)
- 28,1% had serum albumin <30g/l (10 missing data), that should have impacted on medications concentration, in particular those with important binding to plasma protein as bortezomib (83%), dexamethasone (80%), prednisone (90%) and bendamustine (94-96%)
- **74% had polymedication**
- Mean CCI score was 1,1 (62% had CCI≤1). The most frequent comorbidities were diabetes (23,5%), cardiac (18%), vascular (14%), respiratory (12,5%). **Diabetes prevalence was 17%** in this group, more than in 70-79 years general population (21 vs 17% in male, 12,5 vs 11,5% in female).
- Mean PIM per patient was 1,17 with Beers list [0-6], **only 37,5% had no PIM** (fig 3). Among 127 PIM: 36% concern psychotropics, 24% cardiovascular medications, 10% NSAIDs.
- Each patient had at least one of these risk factors of adverse drug event.
- **Polymedication and number of PIM are significantly correlated (p <0.001 bilateral, chi2)**
- **Charlson ≥ 1 is significantly correlated with male sex (p = 0.037 bilateral, chi2)**

Fig 2: Charlson Comorbidity Index score

zero 41% — three or more 13% — two 25% — one 21%

Fig 3: Number of Potentially Inappropriate Medications (Beers list)

■ six ■ five ■ four ■ three ■ two ■ one ■ none

1 — 3 — 10 — 1 — 15 — 30 — 36

Conclusion

Further analyze is ongoing to compare data between two age subgroups.
High rate of diabetes, renal insufficiency, polypharmacy, and PIM and in elderly with multiple myeloma requires combined pharmaceutical and geriatric assessments, with patients and general practitioners education, before introducing chemotherapy which may cause further adverse events. Both evaluation will be included in a daily oncogeriatric hospitalization.

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