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Introduction: Novel treatment options have improved overall survival (OS) of patients with multiple myeloma (MM) and life time expectancy is expected to further lengthen given continuous drug development. Notwithstanding being within this privileged situation, the increase in costs puts health care funding and access to drugs under pressure. Therefore, cost-effectiveness, providing insight in the relation between input (scarce resources) and outcomes (i.e. health benefits for patients), is increasingly important in treatment decisions. Specifically, the end of life (EOL) phase often comes at high cost, while the contribution to OS and quality of life might be minimal. Despite its importance, data on EOL treatment-associated costs in MM are scarce. Therefore, we investigated this in a real-world cohort of MM patients. **Methods:** We identified all MM patients who received (a part of) their treatments in Amsterdam University Medical Center, the Netherlands, and who died between January 1st 2017 and July 1st 2019. All anti-MM treatments from diagnosis to death, including dose adjustments and start- and stop dates were extracted from health records. We calculated treatment costs using the Dutch Z-index (indicating drug costs), of August 2020 and converted this to USD using the exchange rate on April 1st 2022 of the IMF. **Results:** Data were available of 104 patients, of whom 70 male (67.3%), diagnosed between 2001 and 2019. Median age at diagnosis was 63 years (range: 40-83), 64 (61.5%) underwent a stem cell transplantation. Median OS was 56.6 months (95%CI: 46.2-67.0). The median number of lines of therapy was 3 (range 1-16). In first line, median time to next treatment (TTNT) was 19.2 months. With each subsequent line, TTNT and numbers of patients decreased to a median of 3.16 months in 8th line (n=17). 78 patients died of MM, 18 patients due to other causes. Median last day of MM therapy administration was 20 days before death (range 0-3087 days), most often being pomalidomide (29.5%), lenalidomide (26.3%) or bortezomib (10.5%). Mean total treatment costs (without study treatment) from diagnosis to death were $175,941 (range: $3,567- $702,303). Mean costs of treatments in the last 3 months before death were $18,837 (10.7% of total costs) (n=82; 79%). Mean total costs during the last 30 days were $5,540 (3.15%) (n=66; 63%), $2,760 (1.6%) in the last 14 days (n=48; 46%) and $1,479 (0.8%) in the last 7 days (n=32; 31%). **Conclusions:** We here show that almost 50% of patients received anti-MM therapy during the 14 days preceding death, which was even 63% in the last month before death. Associated treatment costs were considerable, especially in light of limited survival benefit. The identification of factors predicting efficacy and clinical benefit of continuing EOL therapy, warrant further investigation.

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Effectiveness of anti-SARS-CoV-2 vaccine "booster" dose in patients with multiple myeloma

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Introduction: COVID-19 showed poor outcome in patients with multiple myeloma (MM) before starting vaccination campaign; in particular, fatality rates reported in non-vaccinated MM patients ranged from 27% to 57%. Recent data also indicate lower immune response in MM patients after receiving anti-SARS-CoV-2 vaccines than in the general population. However, data about clinical effectiveness of a third, "booster" dose of vaccine in this subset of high risk hematological patients is limited. The aim of this study was to evaluate the outcome of SARS-CoV-2 breakthrough infection in MM patients after three doses of anti SARS-Cov-2 vaccine. **Methods:** We performed a retrospective analysis of 39 consecutive patients with active MM who experienced SARS-CoV-2 infection between December, 2021, and May, 2022. All patients had received three doses of anti-SARS-Cov2 miRNA vaccines and 3 of them had also received a "fourth" dose. A case of "reinfection" was documented. SARS-CoV-2 infections were diagnosed by RT-PCR or by antigen rapid test on nasopharyngeal swabs. We collected data about sex, age, ongoing treatment, symptoms, hospitalization, mortality, and additional use of antiviral drugs or monoclonal antibodies for the treatment of COVID-19. **Results:** The median age of the whole group was 67.5 (range: 39-84) years. Twenty-five patients (64.1%) were male. The most frequent isotype was IgG (59%), followed by IgA (23.1%), light chain (12.8%) and non-secreting subtype (5.1%). Median number of days between the last dose of vaccine and infection was 109 (range: 11-191). About disease status at SARS-CoV-2 breakthrough infection, 18 cases (46.1%) were newly diagnosed/first line MM, 15 (38.5%) were first relapses, 6 (15.4%) were further relapsed MM. Thirty-six patients (92.3%) were under treatments including dexamethasone (92.3%), proteosome inhibitors (20.5%), IMiDs (82%), anti-CD38 monoclonal antibodies (43.6%) or other therapies (7.7%). Three patients, in complete response after ASCT, were in follow-up, without active therapy. One patient was infected 156 days after CAR-T treatment. Infection was symptomatic in 25 patients (64.1%) and the most common symptoms were fever, cough, muscle pain, headache, fatigue. Overall, 3 patients (7.7%) were hospitalized: among them, 1 (2.6%) was admitted to an intensive care unit due to respiratory distress. One patient (2.6%) died. Eight patients (20.5%) received antiviral drugs: 5 molnupivar, 1 redemsivir, 1 PF-07321332/ritonavir + sotrovimab, 1 sotrovimab.

Conclusions: Our data indicate that SARS-CoV-2 infection in "triple vaccinated" MM patients is quite frequent, but also that the clinical outcome of COVID-19 appears to be significantly improved by a "booster" dose of vaccine with respect to pre-vaccination era in this high risk population. The role of new antiviral agents and monoclonal antibodies currently used to reduce the risk of progression of COVID-19 to severe disease warrants to be further investigated in larger series.

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Disparities in multiple myeloma between hispanics and non-hispanics – real world outcomes

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Introduction: Multiple myeloma (MM) is the second most common hematological malignancy in the United States (US), constituting 1.8% of all new cases (SEER database). It is a heterogeneous disease and has shown to be influenced by sociodemographic factors, with poor survival in non-Hispanic (NH) Blacks and Whites (Pulte et al. 2014). Yet, clinical characteristics and outcomes of MM are not well understood in Hispanics - one of the fastest-growing populations in the US. **Methods:** We used the Texas Cancer Registry to evaluate the differences between Hispanic and NH MM patients diagnosed between 1996 to 2016. Socio-demographic characteristics including ethnicity, gender, age, and comorbidities at diagnosis, and primary payer (Medicaid, Medicare, private insurance, or self-pay) were evaluated. Ethnicity was identified as Hispanic and non-Hispanic, while the race was described as Whites, Blacks, and American Indians. Descriptive statistical analysis was performed using SAS statistical software. Hazard ratios (HR) for death and corresponding 95% confidence intervals (CI) were estimated using the cox proportional hazard model. **Results:** We found 5115 Hispanic and 22426 NH MM patients satisfying the inclusion criteria. Hispanics were diagnosed with MM at a younger age compared to NH (mean (CI) - 65.2 (12.4) vs 68.0 (11.8), P< 0.001). Hispanic ethnicity was associated with poor survival after controlling for age at diagnosis, gender, race, and treatment (HR death 1.19, p=0.001). Additionally, increasing age at diagnosis correlated with higher mortality (HR 1.88 in 51-65 years old (yo), HR 2.65 in 66-79 yo, and HR 4.30 in 80+ yo, p=0.001), while females (HR 0.85, p=0.001) and transplant recipients (HR 0.5, p=0.001) had better survival on multivariate cox regression analysis. Blacks (HR 1.17) and American Indians (HR 1.13) did worse when compared with Whites, however, the difference was not statistically significant; this could be due to low numbers in the analyzed population. Moreover, patients with private insurance had better outcomes than uninsured or Medicare insured (HR 0.85, p=0.049) when controlled for other covariates. **Conclusions:** To our knowledge, this is the largest analysis reporting outcomes of MM in Hispanics in the US. While the study is limited by its retrospective nature, the recognition that outcomes in MM patients are impacted by ethnicity is important. This could be related to our findings of earlier age at diagnosis in Hispanics and higher survival in patients with private insurance relative to other payors. Altogether, these data highlight the need for improved access to equitable healthcare and clinical trials for Hispanics.

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Oral antivirals ritonavir-nirmatrelvir and molnupiravir are highly effective in patients with multiple myeloma and COVID-19; a single-center, prospective study

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Introduction: Patients with multiple myeloma (MM) and COVID-19 have often severe clinical course and high mortality rates (~25%), due to the concomitant disease and treatment-related immunosuppression. Beyond supportive care, antiviral drugs, including molnupiravir and the ritonavir-boosted nirmatrelvir, have been licensed for the treatment of high-risk COVID-19. Although available evidence supports the use of antivirals in patients with SARS-CoV-2 to prevent severe disease, relevant data on MM patients is scarce. This prospective study investigates the effect of the aforementioned antiviral agents on COVID-19 severity and mortality in patients with MM. **Methods:** Consecutive patients with MM and COVID-19 were prospectively enrolled in the study, which started in February 2022. All patients had a positive PCR test for SARS-CoV-2. The patients received either ritonavir-nirmatrelvir or molnupiravir, according to the national guidelines. Treatment with antivirals was initiated during the first five days from COVID-19 symptom onset in patients without need for supplemental oxygen. All patients were at high risk for severe COVID-19 disease due to the underlying MM. Baseline demographic and clinical characteristics, as well as levels of neutralizing antibodies (NAbs) were collected and compared. The effect of different treatments on COVID-19 severity and mortality were examined. **Results:** A total of 64 MM patients infected with SARS-CoV-2 were included; 34 (53%) received ritonavir-nirmatrelvir and 30 (47%) molnupiravir. There was no difference in median age (65±10 vs 62±10 years, p=0.387), gender (44% vs 50% females, p=0.638), body weight (79±14 vs.