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Geographic variability in healthcare burden of multiple myeloma in Spain: trends in hospitalization and mortality (2016-2023).

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INTRODUCTION

The incidence of multiple myeloma (MM) shows marked geographical variability worldwide, with higher rates reported in North America, Australia and Western Europe compared to Asia and Africa, highlighting the influence of genetic, environmental and healthcare-related factors on its distribution. In Spain, accurate population-based data describing regional differences in healthcare burden of MM remain limited.

The primary objective of this study is to characterize the geographic variability in healthcare burden of MM across Spanish regions between 2016 and 2023, and to analyze trends in hospitalization rates and in-hospital mortality per Spanish region.

RESULTS

Hospitalization rates varied substantially across Spanish regions (Table 1). The highest mean hospitalization rates were observed in Castilla y Leon (36.57), Galicia (35.07), and Madrid (33.94), whereas the lowest rates were recorded in Andalucia (19.82) and the Balearic Islands (20.71). In-hospital mortality rates also varied geographically. Northern and northwestern regions, such as Asturias, Galicia, and La Rioja exhibited higher in-hospital mortality rates compared with central and southern regions (Figure 1).

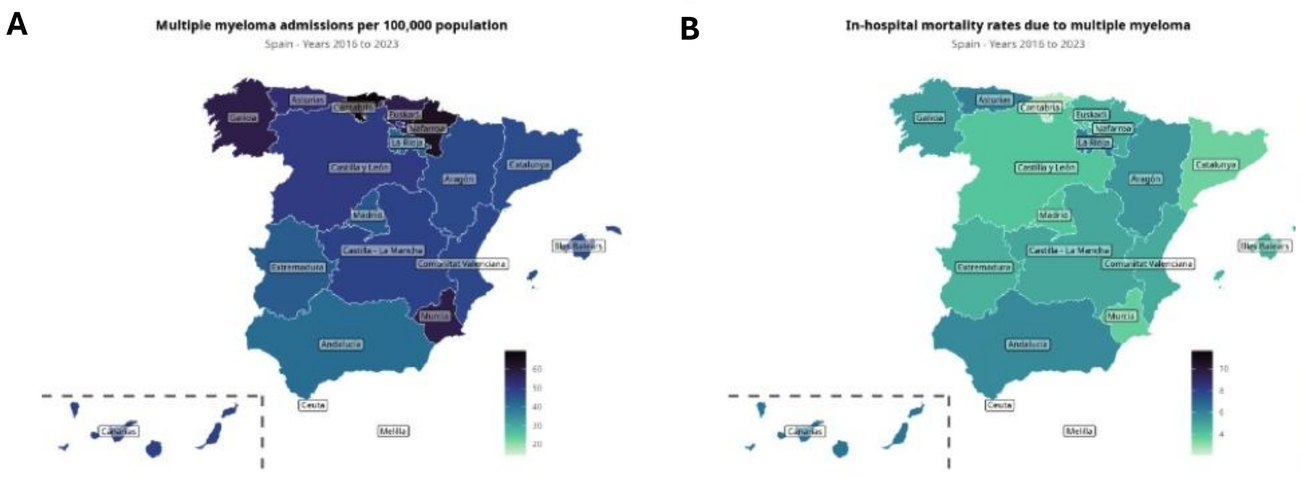

Figure 1. Regional Variation in Multiple Myeloma Hospitalizations and In-Hospital Mortality Rates in Spain (2016-2023).

Table 1. *Hospital Admissions and In-Hospital Mortality by Spanish Region (2016–2023).*

Region	Hospital admissions (rate per 100,000 population)	In-hospital mortality (rate per 100 admissions)
Andalucía	13366 (19.82)	1718 (2.55)
Aragón	3451 (32.7)	419 (3.97)
Asturias	2666 (32.58)	306 (3.74)
Illes Balears	1904 (20.71)	170 (1.85)
Canarias	4325 (25.17)	586 (3.41)
Cantabria	1568 (33.65)	114 (2.45)
Castilla y León	7032 (36.57)	815 (4.24)
Castilla - La Mancha	4261 (26.1)	465 (2.85)
Catalunya	19459 (31.68)	1584 (2.58)
Comunitat Valenciana	11975 (29.86)	1271 (3.17)
Extremadura	2398 (28.04)	283 (3.31)
Galicia	7582 (35.07)	943 (4.36)
Madrid	18071 (33.94)	1595 (2.99)
Murcia	3945 (32.95)	342 (2.86)
Navarra	2207 (42.19)	155 (2.96)
Euskadi	6760 (38.29)	627 (3.55)
La Rioja	845 (33.23)	118 (4.64)
Ceuta	43 (6.38)	10 (1.48)
Melilla	98 (14.18)	9 (1.3)
Total	111956 (29.74)	11530 (3.06)

CONCLUSION

The nationwide study reveals substantial geographic disparities in both hospitalization rates and in-hospital mortality for MM across Spain. Several factors may contribute to these differences. Regional variations in population age structures are likely relevant, as regions with older population would be expected to show higher MM-related hospital burden. Differences in healthcare access and diagnostic capacity may also play a role, particularly in regions hosting referral hematology centers for MM. Additionally, heterogeneity in data capture and coding practices within administrative hospital databases may account for the observed variability. The particularity low hospitalization rates observed in Ceuta and Melilla may reflect their small population size and referral of patients to mainland hospitals. Overall, these findings underscore the need for harmonized diagnostic and care pathways across Spain. Further investigation into the demographic, clinical, and healthcare system factors underlying regional MM burden should be warranted.

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