Low socioeconomic status is associated with a higher mortality risk in MS

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Abstract short title: Socioeconomic status and mortality risk in MS

Introduction: A lower socioeconomic status (SES) is associated with higher mortality risk in the general population. However, little is known about this relationship among persons with multiple sclerosis (MS).

Objective: We investigated whether SES was associated with mortality risk in the MS population.

Methods: We used linked health administrative data in British Columbia, Canada. Incident onset MS cases (\geq 3 hospital or physician-related MS diagnostic codes or \geq 1 MS disease modifying treatment(s) [DMT]) with a first demyelinating event (the index date) from 1-January-1994 onwards were identified and followed to the earliest of death, emigration or 31-December-2017. DMT prescriptions filled during follow-up were described between 1996-2017. We estimated SES within +/-3 years of the index date using postal codes and neighbourhood-level average household income. Cox proportional hazards regression was used to assess the association of SES-quintiles with all-cause mortality, adjusted for: sex, age and calendar year at the index date, and the Charlson Comorbidity Index (based on the year pre-index date). Findings were reported as adjusted hazard ratios (aHR) and 95% confidence intervals (CI).

Results: Of 12,126 included cases, 8,803 (73%) were women, the mean age at the index date=44 years (SD=14), 3,111 (26%) had \geq 1 comorbidity. Mean follow-up (1994-2017) was 11 years (SD=7), and 3,175 (26%) persons filled a DMT prescription (1996-2017). Relative to the highest (5th-quintile), lower SES-quintiles (1st to 3rd) were associated with a higher hazard of mortality; aHRs ranged from: 1.61, 95%CI 1.36-1.91 (1st-quintile; most deprived) to 1.25, 95%CI 1.05-1.50 (2nd-quintile), 1.22, 95%CI 1.02-1.45 (3rd-quintile) and 1.12, 95%CI 0.94-1.34 (4th-quintile).

Conclusion: A lower SES was associated with higher mortality risk in person with MS. The all-cause mortality hazard also exhibited a clear gradient across the SES quintiles. Further studies are needed to understand this association including the impact of specific comorbidities and DMT exposure.

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Conflict of interest

F Zhu, Y Zhao, O Dejardin, and E Leray have no conflicts of interests relevant to this study.

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