

Management of vascular risk in people with multiple sclerosis in England: a population-based matched cohort study

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Introduction: People with Multiple Sclerosis (PwMS) are at increased cardiovascular risk and have a high prevalence of vascular comorbidities. Stringent management of vascular comorbidities is important given their association with disability progression.

Aim: We conducted a population-based matched cohort study to assess vascular risk management in PwMS versus a matched non-MS population.

Methods: PwMS diagnosed after 1 Jan 1987 and registered with English general practices were identified from the CPRD database and matched with up to 6 controls by age, sex, and general practice. Clinical data were linked with hospital and mortality data. First MS diagnosis was considered as the index date and a matched index date was assigned to controls. Study baseline was the year of MS diagnosis. We used multivariable linear, logistic, and mixed-effect linear regression models to assess baseline differences in risk factors and co-morbidities, and risk factor changes over time. We compared the risk of hypertension and type 2 diabetes and the probability of reaching management targets over the study period between groups using Cox proportional hazard regression models. Models were adjusted for age, sex, ethnicity (white/non-white), deprivation index, smoking status, BMI, blood pressure, number of primary care visits in the index year, and index year.

Results: We matched 12,251 PwMS to 72,572 controls. Baseline age was 44.9 (13.3) years, 70% were female. At baseline PwMS had lower systolic blood pressure (PwMS 125.1 mmHg (13.7); controls 125.5 mmHg (14.2); β -0.45 95%CI -0.68, -0.22). PwMS also had a lower BMI (25.9 [4.8]) than controls (26.2 [4.2]) (β -0.49 95%CI -

0.57,-0.41) but trajectories did not differ over time. Baseline prevalence of type 2 diabetes and hypertension was greater for PwMS versus controls (diabetes 7.2%, 5.0%, OR 1.26 95%CI 1.15, 1.38; hypertension 9.7%, 7.3%, OR 1.07 95%CI 1.06, 1.07). PwMS had an increased incidence of both comorbidities (type 2 diabetes HR 1.25 95%CI 1.10, 1.42; hypertension HR 1.11 95%CI 1.05,1.17). PwMS with hypertension at baseline were 35% more likely to reach the national target for hypertension management over time (HR 1.35 95%CI 1.24, 1.47) than controls. Sex-specific analyses confirmed these findings.

Conclusions: As expected PwMS have a greater prevalence and incidence of vascular comorbidities and there is some evidence of better vascular (hypertension)management. Ultimately individualised full multi-vascular risk assessment is needed.

Disclosure

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