Psoriasis and the risk of stroke: a population-based cohort study using the Clinical Practice Research Datalink (CPRD)

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BACKGROUND: The association between psoriasis and the risk of stroke is not clearly understood.

OBJECTIVE: To investigate whether psoriasis is independently associated with stroke after adjusting for risk factors.

METHODS: An inception cohort of patients with psoriasis and matched controls (1:5) was identified for the interval 1994-2009 using the CPRD. Patients were at least 20 years old with no history of cardiovascular disease (CVD) or diabetes. Risk factors explored included psoriasis, severe psoriasis (exposure to systemic therapy or biologics), inflammatory arthritis, diabetes, chronic kidney disease, hypertension, hyperlipidaemia, transient ischaemic attack (TIA), myocardial infarction (MI), atrial fibrillation (AF), angina, valvular heart disease, thromboembolic disease, congestive heart failure and smoking as time-varying covariates; depression, age, gender and calendar year as baseline characteristics. Cox proportional hazard regression using shared frailty models and a stepwise forward approach (p=0.05) estimated hazard ratios (HRs) with 95% confidence intervals for the risk of incident stroke (fatal and non-fatal).

RESULTS: 48,523 psoriasis patients and 208,187 controls were identified (mean (SD) age at diagnosis 48 years (16); 56% female). During a median follow-up of 5.2 years, 522 (1.08%) incident stroke events occurred in patients with psoriasis and 2,018 (0.97%) in controls. Crude HRs associated with psoriasis and severe psoriasis were 1.10 (1.00-1.21) and 1.21 (0.74-1.98) respectively. The stepwise regression model included: age HR 1.08 (1.08-1.08); TIA HR 4.85 (4.18-5.62); smoking HR 1.68 (1.53-1.85); AF HR 2.13 (1.84; 2.48); calendar year HR 0.95 (0.94-0.96); hypertension HR 1.45 (1.34-1.57); male gender HR 1.40 (1.29-1.51); MI HR 1.81 (1.45-2.25); and thromboembolic disease HR 1.40 (1.18-1.66). Neither psoriasis nor severe psoriasis were selected in the multivariable model as important predictors for stroke. When entered, their adjusted HRs were 1.05 (0.95-1.16) and 1.21 (0.73- 1.99) respectively.

CONCLUSION: Neither psoriasis nor severe psoriasis were associated with an increased risk of stroke after adjusting for known risk factors.