Topic: Primary care

Title: Musculoskeletal pain and prognosis of acute coronary syndrome and cerebrovascular accident: a linked electronic health record cohort study

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Abstract

Background: There is some evidence of an increased risk of cardiovascular disease in patients with painful musculoskeletal conditions, but it is unclear if musculoskeletal pain also worsens its prognosis. The aim was to determine whether patients with musculoskeletal pain have poorer prognosis following acute coronary syndrome (ACS) or cerebrovascular accident (CVA).

Methods: Data were obtained from national primary care electronic health records (Clinical Practice Research Datalink; CPRD) with linkage to hospital admissions and mortality records. Patients aged 45 years and over with ACS or CVA recorded in primary care and as the primary reason for hospital admission within ±30 days were included. Patients were grouped by consultations in primary care for painful musculoskeletal conditions (by recency/severity and by condition) in the 24 months prior

to ACS or CVA. Severe musculoskeletal pain was defined as prescription of strong analgesia or relevant secondary care referral in the 6 months before ACS or CVA.

Short-term outcomes included length of hospital stay, mortality during admission or within 30 days of discharge, and readmission within 30 days of discharge. Management outcomes included procedures during admission and prescriptions for anti-hypertensives, anti-platelets and anti-coagulants in the 3 months following admission. Longer term outcomes included further ACS or CVA and mortality in those who survived >30 days after discharge.

Results: There were 171,670 patients with ACS (36% females; median age 70 years) and 138,512 patients with CVA (49% females; median age 76 years); 30% of patients in each cohort consulted for a painful musculoskeletal condition prior to admission for ACS or CVA. An increased prevalence of cardiovascular risk factors was observed for patients with severe musculoskeletal pain compared to those without pain for comorbidities such as obesity (ACS 26% vs 16%, CVA 25% vs 15%), diabetes (ACS 24% vs 17%, CVA 23% vs 17%) and lifestyle characteristics such as current/ex-smoker (ACS 58% vs 51%, CVA 52% vs 46%), respectively.

Patients with severe musculoskeletal pain had similar lengths of stay, rates of readmission and further ACS/CVA after adjustment for sociodemographic characteristics and comorbidities than those without musculoskeletal pain. They were more likely to receive a procedure during admission for ACS (adjusted risk ratio [aRR] 1.15, 95% confidence interval [CI] 1.03-1.28). Prescriptions for ACS (severe pain aRR 1.01, 95% CI 1.00-1.02; inflammatory condition aRR 1.01, 95% CI 1.00-1.02) and CVA (inflammatory condition aRR 1.04, 95% CI 1.01-1.06) were higher in the 3 months post-admission for those with musculoskeletal pain.

Conclusion: Musculoskeletal pain did not independently worsen the prognosis following hospitalisation for incident ACS or CVA. The findings are reassuring, but also highlight the need for closer surveillance due to the complexities of patients with severe musculoskeletal presenting with incident ACS or CVA.