Development of an Algorithm for the Classification of Cardiovascular Comorbidity in Rheumatoid Arthritis: Data from the Ontario Best Practices Research Initiative

Kangping Cui, Mohammad Movahedi, Claire Bombardier, Bindee Kuriya, on behalf of OBRI Investigators

Purpose: Cardiovascular disease (CVD) is increased in rheumatoid arthritis (RA). The ability to accurately identify CVD is important for primary and secondary prevention strategies. RA registries collect comorbidity data, but discordance between physician-reported and patient-reported CVD often exists. Therefore, we aimed to develop an algorithm for the classification of CVD in a representative RA registry.

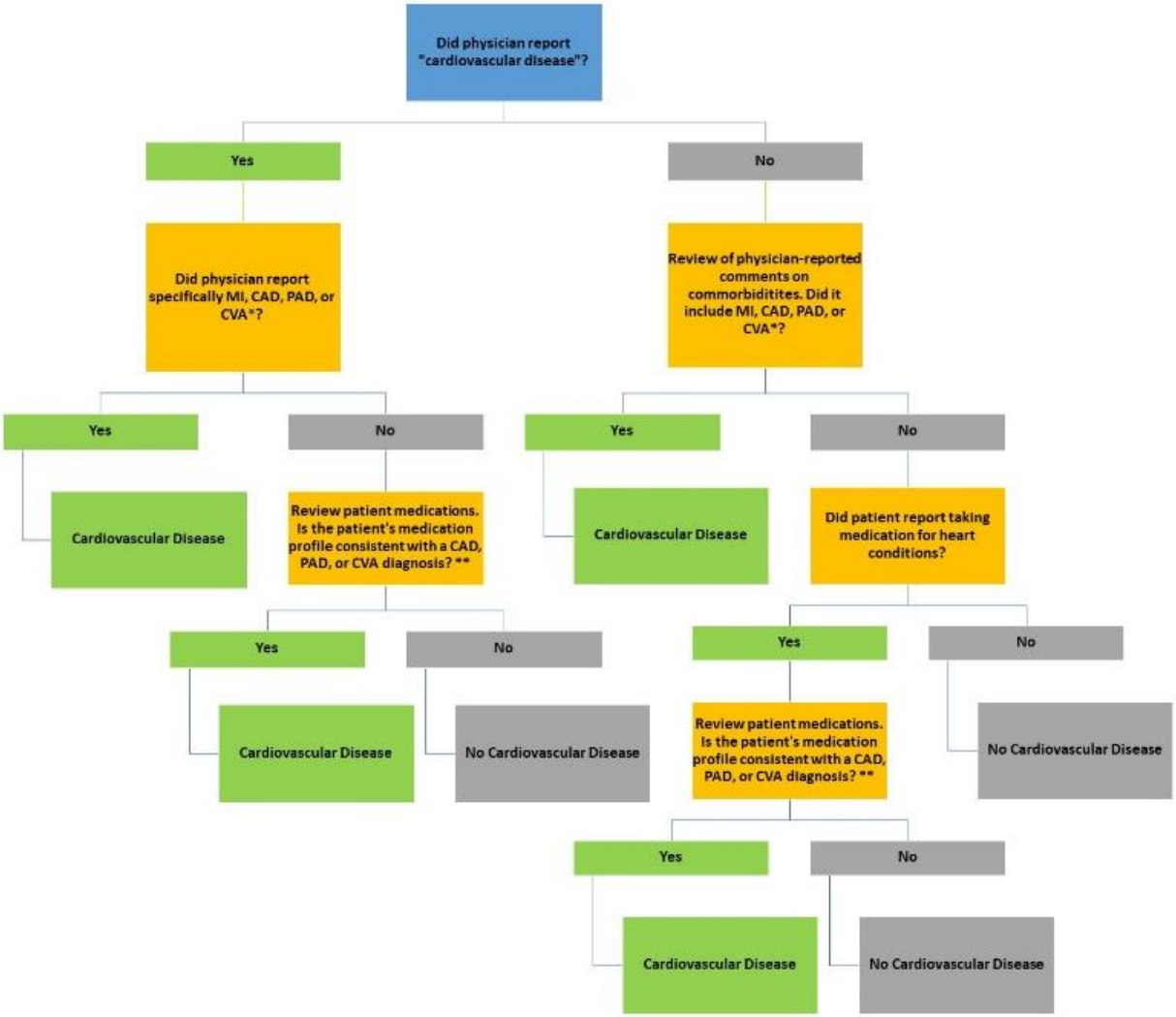
Methods: Data were collected from the Ontario Best-practices Research Initiative (OBRI), a clinical registry of RA patients followed in routine care in Ontario, Canada. Clinical information, including patient medication profile, was obtained at registry entry, through physician visits and patient telephone interviews. Cardiovascular disease (CVD) was defined as having ≥ 1 of myocardial infarction (MI), coronary artery disease (CAD), cerebral vascular accident (CVA, including transient ischemic attack and stroke), or peripheral arterial disease (PAD).

Results: An algorithm for classifying CVD and CVD risk factors was developed including the 2033 subjects with baseline data (Figure 1). At cohort entry, the prevalence of CVD was 5.3% (n=108) and the majority had physician reported CAD/MI (n=96, 4.7%) with lower prevalence of CVA (0.5%) or PAD (0.1%). Seventeen subjects (15.7%) were not identified as having CVD by physician-report but were classified as having CVD upon medication review.

Conclusion

An algorithm for classification of CVD has been successfully developed in a representative RA registry. Validation based on chart review is underway in a subsample to verify the findings. The discrepancy between physician and patient-reported CVD highlights the importance of utilizing information from multiple sources when classifying comorbidities. The classification of CVD risk factors is also underway to further validate the algorithm.

Figure 1. Classification of patients with cardiovascular disease.



* MI: myocardial infarction; CAD: coronary artery disease; PAD: peripheral artery disease, CVA: cerebral vascular accident (including stroke and TIA).

** Clinical judgement is applied at this step. Information considered includes whether the patient is on anti-platelet agents, anti-hypertensives, cholesterol control medications, or nitroglycerines. For uncertain cases, a second reviewer's opinion is weighed in.