013. Assessment of Cardiovascular Disease Risk And Therapeutic Patterns Among Urban Black Rheumatoid Arthritis Patients

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Purpose
Patients with rheumatoid arthritis (RA) have nearly twice the risk of cardiovascular disease (CVD) compared to the general population. Besides the traditional risk factors for CVD including obesity, diabetes, hypertension and dyslipidemia, patients with RA also have increased risk due to chronic inflammation and elevated cytokine levels.

Specialized CV risk models for RA that include disease activity measures, disability index, duration of disease, steroid use in addition to traditional risk factors have been proposed to accurately predict CVD in RA. While older therapeutic agents such as corticosteroids and NSADs increase CVD risk, modern therapy including DMARDs and biologics have been shown to decrease CVD in RA populations.

We aim to assess the prevalence of CVD risk factors including traditional (obesity, hypertension, diabetes, dyslipidemia and smoking) as well as non-traditional ones (inflammatory markers, length of disease and disease severity among) in our RA predominantly Black population; the study will also examine the therapeutic patterns, compared to a predominately White population of the Consortium Of Rheumatology Researchers Of North America (CORRONA).

Methods
Retrospective study of patients ≥18 years old with a principal or secondary discharge diagnosis of RA identified by ICD-9 and ICD-10 codes. Records reviewed between 1/2010 to 5/2017 from two large NYC hospitals with predominantly Black population. Two independent investigators reviewed the cases identified by ICD-codes to confirm RA diagnosis by physician notes and the presence of disease modifying antirheumatic drugs (DMARD) in the medication list or DMARD prescription.

Cases were excluded for insufficient data for RA diagnosis with no current or past DMARD therapy and/or non-RA diagnosis of arthritis. Data abstraction was performed for the selected cases, utilizing the predesigned data collection sheet for the study. Data collection included demographics, smoking history, year of diagnosis, comorbidities including CVD, laboratory data, hand imaging, and treatment regimens. Collected data was verified by a second investigator. Bilateral hand imaging findings are being reviewed utilizing the Simple Erosion Narrowing Score by musculoskeletal radiologist.

Descriptive statistics was applied. We used measures of central tendencies and dispersion for continuous variables and frequency distribution for categorical variables. Data are presented as the mean ± standard deviation (±SD). We compared our predominantly Black RA population to previously published RA data with predominantly White cohorts; Consortium Of Rheumatology Researchers Of North America (CORRONA) to assess differences in CVD and CVD risk

prole and features of RA disease severity as well as therapeutic patterns including the use of steroids, DMARDS and biologics.

Results

Of the 1,142 RA patients identified by ICD codes, only 500 were confirmed as RA cases and included in this analysis. Mean age was 64.6±14.8 (± SD), 87.8% were women, 83.4% were Black and 9.2% Hispanics. BMI was 28.8±7.5 with 37% of the patients having BMI ≥30(Kg/m2).

Our predominantly Black (83.4%) cohort with RA duration of 13.1±9.7 years was compared to predominantly White (89%) CORRONA cohort with RA duration of 10.1±9.8 years. There were higher rates of CVD risk factors: hypertension (66.4% vs. 29%), dyslipidemia (41% vs. 25%), diabetes (28.0% vs. 8%) for our cohort compared to CORRONA respectively. Our cohort had lower rate of smoking (29.5% vs. 34%), compared to CORRONA cohort. Myocardial infarction or known coronary artery disease (19.4%) was similar to that reported in the CORRONA study. The rate of other CVD in our cohort that were not reported in the CORRONA study were: congestive heart failure (14.8%), stroke or transient ischemic attack (10.2%) and atrial fibrillation (8.4%).

In our study, erythrocyte sedimentation rate (ESR) was 62.4±37.2mm/hr. and 76.2% had C-reactive protein (CRP) >4mg/L. Serological markers: Rheumatoid factor (RF)+ 75.5%, anti-citrullinated peptide antibodies (ACPA)+ 69.3%, RF+ or ACPA+ 85.8% (77% in the CORRONA cohort), and dual RF-ACPA+ in 54% of the patients. Utilizing SENS scoring (not reported in the CORRONA study); hand X-rays revealed: periarticular osteopenia, joint space narrowing and joint erosions in 96.6%, 72.2% and 67.8% respectively. Erosion score (maximum 32) was 12.6 ±11.7 and joint space narrowing score (maximum 30) was 20.6 ±11.9.

Prednisone was used in 56% (30% for the CORRONA population) with average dose 8.14±17.5mg/day, 22% (61% for the CORRONA study) on NSAIDs, 40% (84% for the CORRONA cohort) on methotrexate (average dose 6.6±8.5mg), 42.5% on other DMARDs and 16% (56% for the CORRONA patients) were on biologics.

Conclusions

This is the first study of CVD in blacks with RA including assessment of disease severity and therapeutic patterns compared to Whites. We observed higher rates of CVD risk factors including obesity, diabetes, hypertension, dyslipidemia, compared to the White cohort of the CORONA study. Our population had aggressive disease with high rates of seropositivity, joint narrowing/erosions and elevated inflammatory markers.

Our RA black cohort had nearly double the rate of steroid use (a risk factor for CVD) and less than one third utilization of biologics, (which lowers the risk of CVD risk), compared to Whites of the CORRONA study.