Analysis of venous thromboembolic risk among psoriatic arthritis patients

Tal Gazitt[1], Jacob Pesachov[1], Idit Lavi[2], Muna Elias[1], Amir Haddad[1], Ilan Feldhamer[3], Arnon Dov Cohen[3,4], Walid Saliba[2*] and Devy Zisman [1,5*]

[1] Rheumatology Unit, Carmel Medical Center, Haifa, Israel.
[2] Department of Community Medicine and Epidemiology, Carmel Medical Center, Haifa, Israel.
[3]Chief Physician's Office, Central Headquarters, Clalit Health Services, Tel Aviv, Israel.
[4]Siaal Research Center for Family Medicine and Primary Care, Faculty of Health Sciences, Ben-Gurion University of the Negev, Beer-Sheva, Israel.
[5]The Ruth and Bruce Rappaport Faculty of Medicine, Technion, Haifa, Israel.

*Both authors contributed equally to this abstract.

BACKGROUND: Psoriatic arthritis (PsA) is a chronic, immune-mediated, systemic inflammatory arthritis associated with comorbidities including metabolic syndrome, cardiovascular risk factors and cardiovascular disease (CVD).

AIM: To evaluate the prevalence of venous thromboembolism (VTE) in a PsA patient cohort using a large health care provider database.

METHODS: The Clalit Health Services (CHS) database was interrogated for an adult patient cohort who were newly diagnosed with PsA between 2005-2018 with date of diagnosis considered the index date. A risk set was employed to randomly select 4 controls without PsA as a comparator group to the PsA cohort matched by age, sex, ethnicity, and index date. Both groups were followed from the index date until the first occurrence of VTE event, death, or end of followup, whichever came first. Distribution of time to reach VTE events in patients with and without PsA and the curves were compared by log-rank test. Marginal model with robust covariant estimate counting for the matching was used to estimate the crude and adjusted hazard ratio (HR) for the association between PsA and VTE. Within the group of PSA patients, Cox proportional hazard regression models was used to calculate the risk of having VTE given demographic variables, socioeconomic status, smoking, selected comorbidities, and c/bDMARD. Continuous variables were summarized with mean ± standard deviation, and categorical variables were presented as numbers and proportions. All tests were 2-sided; p values of $\leqq 0.05$ were statistically significant.

RESULTS: The PsA cohort consisted of 5,275 patients, 53.2% females with mean age of 51.66 ±15.41. The control group consisted of 21,011 subjects matched for age and sex. In relation to the control group, the PsA cohort had a higher SES (25.1% vs 23.4%, $p<0.0001$), higher tobacco use (42.2% vs.39.6% $p<0.0001$) and obesity (33.5% vs 25.8%, $p<0.0001$). The study group had a statistically significant higher incidence of diabetes (33.8% vs 26.2%, $p<0.0001$), IHD (10.3% vs 8.6%, $p<0.0001$), CHF (2.2% vs 1.6%, $p=0.004$), hypertension (30.1% vs 26.2%, $p<0.0001$), CVA/TIA (4.6% vs 3.9%, $p=0.024$) and vascular disease (3.7% vs 3.0%, $p=0.005$). There were 62 patients (1.2%) diagnosed with VTE in the PsA group as opposed to 176 patients (0.8%) in the control group ($p=0.023$, HR=1.397, CI 1.05-1.87). The mean age of patients diagnosed with VTE was higher in the PsA group relative to controls (64.90± 13.20 vs 51.54 ± 15.41, respectively, $p<0.0001$), with higher age, BMI>30, cancer, IHD, vascular disease, and previous VTE found to be associated with VTE in PsA group relative to controls in both univariate and multivariate analyses. The higher prevalence of VTE in PsA patients relative to controls did not remain statistically significant in multivariate analysis. Within the PsA group, patients with VTE were more often of older age and with past history of VTE. Both cDMARD and bDMARD were not associated with increased risk of VTE.

CONCLUSIONS: The prevalence of VTE was higher in PsA group compared to the general population, but after adjustment for comorbidities and risk factors, it no longer remained statistically significant. Among PsA patients, age and previous history of VTE were associated with increased risk of VTE. Addressing VTE risk in the management of patients with PsA is recommended especially in the era of Janus kinase inhibitors.