Real-world epidemiology investigation identifies significant difference between Chinese and Caucasian Rheumatoid arthritis patients

Shicheng Guo1, Steven Schrodi1,2, Dongyi He3,4

1Center for Human Genetics, Marshfield Clinic Research Institute, Marshfield, WI, USA

2Computation and Informatics in Biology and Medicine, University of Wisconsin-Madison, Madison, WI, USA

3Department of Rheumatology, Shanghai Guanghua Hospital of Integrated Traditional and Western Medicine, Shanghai 200052, China.

4Arthritis Institute of integrated Traditional and Western medicine, Shanghai Chinese Medicine Research Institute, Shanghai 200052, China.

**Purpose:** To provide a better clinical epidemiological information for rheumatoid arthritis in China and compare the difference between Chinese and Caucasian, we conducted a real-world investigation in multiple hospitals in China.

**Methods**: We designed a questionnaire to randomly collect the RA patients which meet 1987 ACR/RA criteria to collect 125 questions including demographic information, clinical information, drug treatment, response and outcomes. The effective enrollment require the patients have at least 6 treatment records for 24 weeks between 09/2015 and 12/2016. In order to compare the difference between Chinese and Caucasian population, we compared with data between our research and data collected from Marshfield Clinic electrical health records system between xx and 2019.

**Results:**We enrolled 4,100 patient into the study and finally 3,200 effective-recorded RA patients were obtained which have at least 6 drug treatment records within 24 weeks. We found the male-female ratio for RA patients is 4.5:1 and the most frequent age of onset is 49 years old (SD=14), however, we observed the average age of therapy initiation is 60 years old in China. The average BMI in the cohort is 21.98 (SD=2.71) with 20% of the patients are over-weighted (BMI>24). The frequency for family history of RA, smoking and drinking are 5.5%, 2.1% and 2.4% respectively. The most frequent complications of RA are fatty liver (45.9%), hypertension (10.9%), and diabetes (8.15%), osteoporosis (7.4%) and osteoarthritis (4.6%). The data shown rheumatoid arthritis are more frequently occurred in spring (32.9%) and the most frequent predisposition factors are catching cold (25.12%) while the most frequent aggravating factors are including cloudy or rainy weathers (23.75%), fatigue (18.13%) and touching cold water (15.04%) respectively.

**Conclusion:**We conducted a well-designed real-world epidemiology investigation in Chinese Population and identified the most frequent complications, predisposition and aggravating factors. Meanwhile, we identified the significantly different epidemiological factors between Chinese and Caucasian population.