



## **Association between socioeconomic status and biologic treatment in patients with rheumatoid arthritis: a population-based cohort study**

Ziv Paz<sup>1,2</sup>, Fadi Hassan<sup>2,3</sup>, Amir Saab<sup>2,3</sup>, Haya Hussein<sup>1,2</sup>, Avivit Golan Cohen<sup>4,5</sup>, Eugene Merzon<sup>4</sup>, Ilan Green<sup>4,5</sup> and Mohammad E. Naffaa<sup>1,2</sup>

<sup>1</sup>Rheumatology Unit, Galilee Medical Center, Nahariya, Israel, <sup>2</sup>Azrieli Faculty of Medicine, Bar-Ilan University, Safed, Israel, <sup>3</sup>Internal Medicine "E", Galilee Medical Center, Nahariya, Israel, <sup>4</sup>Leumit Health Services, Israel, <sup>5</sup>Sackler Faculty of Medicine, Tel Aviv University, Tel Aviv, Israel.

### **Background**

Patients in low socioeconomic status (SES) have increased risk for rheumatoid arthritis (RA) development, higher disease activity, increased joint damage and mortality. The impact of SES on biological disease modifying antirheumatic drugs (bDMARD) treatment utilization is less clear.

### **Aim**

We aim to investigate the association between the SES and the time to diagnosis of RA and initiating bDMARD treatment as well as to examine the persistence on the first bDMARD.

### **Methods**

We conducted a population-based historical prospective cohort study based on the computerized database of LHS. We identified RA patients using the relevant ICD-9 codes and gathered all their clinical, administrative and medications' dispensing data. We compared the drug survival times on each bDMARD based on the SES.

### **Results**

We identified 9807 RA patients. Of them, 4268 patients met the study criteria. Patients were subdivided into three groups based on the SES: low, intermediate and high SES. Patients with high SES were diagnosed earlier compared to patients with intermediate or low SES. Patients with higher SES have used higher number of bDMARDs ( $2.3 \pm 1.9$ ) compared to the intermediate ( $2.1 \pm 1.9$ ) or low SES ( $1.7 \pm 2.9$ ) ( $p < 0.001$ ). Survival time of the first bDMARD

was higher in patients low and intermediate SES compared to patients with high SES. High SES and seropositive disease were associated with significantly earlier time of diagnosis of RA and shorter survival times on the first bDMARD.

### **Conclusions**

Higher SES is associated with early diagnosis and treatment with bDMARDs as well as utilization of higher number of bDMARD agents.