

## P505

### Assessment of Lymphopenia in Patients with Multiple Sclerosis Treated with Dimethyl Fumarate in a Real Clinical Setting

Raed Alroughani<sup>1</sup>, Samar Ahmed<sup>2</sup>, Raed Behbehani<sup>2</sup>, Jasem Al-Hashel<sup>3</sup>

<sup>1</sup>Amiri Hospital, Kuwait, Kuwait; <sup>2</sup>Ibn Sina Hospital, Kuwait, Kuwait; <sup>3</sup>Kuwait University, Kuwait, Kuwait

**Background:** Dimethyl fumarate (DMF), a disease-modifying therapy for multiple sclerosis (MS), causes lymphopenia in a fraction of patients. Since lymphocytes contribute to MS pathology, lymphopenia may be a biomarker for response to the drug or for serious adverse events such as infections.

**Methods:** Using the national MS registry, a retrospective study was conducted to identify patients with MS who received DMF. Patients included in the analyses received at least 3 months' pre-prescription and had absolute lymphocyte count (ALC) values available at baseline (within 3 months prior to DMF initiation) and at least twice 3 months post DMF initiation. Grades of lymphopenia were assigned according to the common terminology criteria for adverse events: grade 1 ALC <lower limit of normal to 800/mm<sup>3</sup>, grade 2 ALC <800–500/mm<sup>3</sup>, and grade 3 ALC <500–200/mm<sup>3</sup>. The primary outcome of the study is to evaluate ALCs in patients with MS treated with DMF in a real clinical setting.

**Results:** A total of 54 patients met the inclusion criteria, of whom 66.7% were females. Mean age and mean disease duration were 32.3 ± 11.4 and 6.9 ± 6.8 years respectively. Most patients (74.1%) received prior disease-modifying therapies. The mean ALCs decreased from 2190 to 1510/mm<sup>3</sup> (~30% decrease) over a mean duration of 11.7 ± 5.86 months. Among patients who had at least two follow-up ALCs, lymphopenia was seen in 22.2% of patients. Grade 1 and 2 ALCs were observed in 11.1% and 7.4% of patients, respectively, while 3.7% of the patients had grade 3 lymphopenia necessitating interruption or discontinuation of DMF.

**Conclusion:** ALC profiles in DMF-treated patients were generally stable throughout the observational period. The proportion of patients, who developed severe lymphopenia, was similar to figures reported in clinical trials. Further studies are needed to assess the time of ALC recovery in severely lymphopenic patients.