Material and methods This was an observational cohort study based on hospital pharmacy claims data. All patients with multiple sclerosis, with at least one drug claim for any available DMD (interferon, fingolimod, dimethyl fumarate, glatiramer acetate, natalizumab or teriflunomide) between 2012 and 2017, in a general hospital, were eligible. Main outcomes included comparison of treatment patterns, treatment switches over time and oral drug uptake, between 2012 and 2017.

Results A total of 269 patients were included, with a mean age at first drug claim of 42.2 (SD 10.7) years. The sample included 13.0% naïve patients and the remaining had received treatment previously. In 2012, the majority of patients were receiving treatment exclusively with interferon (68.8%), glatiramer acetate (24.1%), natalizumab (4.0%) and fingolimod (1.0%); the remaining switched between treatments over 1 year. Despite more treatment options in 2017, interferon was still the most used (52.7%%), followed by glatiramer acetate (20.2%), teriflunomide (8.5%), natalizumab (6.9%), fingolimod (5.9%) and dimethyl fumarate (2.7%). Over the study period, 77.3% of patients never switched therapy, of these 53.2% remained on interferon, glatiramer acetate (18.6%) and natalizumab (4.5%). In 2012, almost all patients were receiving injectable DMD. During follow-up, oral DMD patient uptake rose from 0.6% in the third quarter of 2012 to 19.5% at the end of 2017.

Conclusion and relevance Unlike previous published studies, this cohort of patients did not show widespread adoption of oral DMD. This study also showed a low proportion of switches to new drugs, with the majority of patients still receiving treatment with interferon over a 6 year period.

REFERENCES AND/OR ACKNOWLEDGEMENTS

No conflict of interest.

6ER-010 THERAPEUTIC DRUG MONITORING OF TUMOUR NECROSIS FACTOR α INHIBITORS IN INFLAMMATORY BOWEL DISEASE: EVIDENCE FROM A REAL WORLD SETTING

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Background and importance Biologics have become the mainstay for treatment of inflammatory bowel disease (IBD) but these drugs often require dose escalation to maintain effectiveness. Currently, therapeutic drug monitoring (TDM) can be used to measure drug concentrations in blood and antibodies against tumour necrosis factor α (TNFα) inhibitors and therefore individualise recommended doses in IBD. TDM is associated with greater effectiveness compared with empirical dose adjustment.

Aim and objectives The study aimed to characterise TDM of the TNFα inhibitor adalimumab in patients diagnosed with IBD.

Material and methods This was a retrospective observational study based on medical and pharmaceutical records. Inclusion criteria comprised patients with a diagnosis of IBD, on maintenance therapy with adalimumab in a general hospital, between 2014 and 2019. The main outcomes included dose escalations, therapy discontinuation and TDM.

Results A total of 40 patients met the inclusion criteria, with a mean age of 39.6 (SD 15.7) years, 50.0% were women, average weight was 66.2 (SD 15.7) kg, and 90.0% had Crohn's disease and the remaining had ulcerative colitis. Adalimumab was more frequently administrated as a fourthline therapy for IBD (32.5%), considering also conventional therapy. Prior to adalimumab, 80% of patients were treated with immunosuppressants, 57.5% with salicylates, 52.5% with infliximab, 45.0% with corticosteroids and 12.5% had been previously treated with adalimumab. The majority of patients (60%) were being treated with adalimumab as monotherapy, 30% concomitantly with immunosuppressants and the remaining with salicylates or corticosteroids. Median time on therapy with adalimumab was 25.1 months. For all patients, although in a small proportion of patients TDM was performed (15.0%), 83.3% maintained therapy with adalimumab, while only 67.6% of patients without TDM remained on therapy with adalimumab. Dose escalation occurred in 32.5% of patients, 15.4% following TDM and 84.6% occurred empirically. All patients with TDM continued therapy whereas 45.5% of patients with empirical dose escalation either discontinued therapy or showed a low response.

Conclusion and relevance The study showed that TDM of adalimumab led to a lower proportion of discontinuations or low response in IBD treatment. Although TDM is still performed in a minority of patients, its use should be encouraged in a real world context.

REFERENCES AND/OR ACKNOWLEDGEMENTS

No conflict of interest.

6ER-011 REAL WORLD ADHERENCE TO MULTIPLE SCLEROSIS THERAPY

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Background and importance Good adherence to disease modifying therapy for multiple sclerosis is associated with a reduced risk of relapse, maximising the beneficial effects of treatment. Hospital pharmacists are key healthcare professional in patient therapy management and adherence.

Aim and objectives The study aimed to assess adherence to multiple sclerosis therapy in a real world setting.

Material and methods This was a retrospective cohort study based on drug hospital pharmacy claims for multiple sclerosis. Patients with at least one drug claim for multiple sclerosis (interferon, fingolimod, dimethyl fumarate, glatiramer acetate, natalizumab or teriflunomide) were identified from a general hospital, between 2012 and 2017. Adherence was evaluated using medication possession ratio (MPR), defined as the total number of days with drug supply divided by the observation period. Adherence was calculated at 6, 12 and 24 months. Only patients who had a drug claim between 30 days before the defined time point or anytime until the end of follow-up were included. Patients with an MPR ≥80% were considered adherent to therapy.

Results There were 269 patients with at least 6 months of follow-up: mean age at first drug claim was 42.2 (SD 10.7)

years. Six month, 12 month and 24 month adherence rates (MPR ≥80%) were as follows: interferon (n=149) 94.0%, 87.2% and 67.1%; glatiramer (n=55) 78.2%, 70.9% and 56.4%; natalizumab (n=18) 94.4%, 83.3% and 66.7%; and fingolimod (n=15) 73.3%, 80.0% and 66.7%. Overall adherence with injectable drugs seemed higher at any time point than oral drugs: injectable drugs 93.6% (6 months), 86.7% (12 months) and 70.0% (24 months) compared with 73.5%, 70.6% and 55.9%, respectively, for oral drugs.

Conclusion and relevance This retrospective analysis showed high 6 month to 24 month adherence rates for injectable DMD in multiple sclerosis. Both interferon and natalizumab had higher adherence rates than reported elsewhere in the literature. Oral DMD had lower adherence rates than injectable DMD but more consistent rates with other studies in the literature.[1]

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6ER-012 PERSISTENCE FOR DISEASE MODIFYING DRUGS FOR MULTIPLE SCLEROSIS

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Background and importance Persistence of therapy is fundamental to achieve disease management goals. Due to the chronic nature of multiple sclerosis treatment, interventions by hospital pharmacists is fundamental to patient persistence with disease modifying drugs (DMD), reducing relapses and slowing disease progression.

Aim and objectives The study aimed to assess persistence for multiple sclerosis therapy.

Material and methods This was a retrospective cohort study based on hospital drug claims for multiple sclerosis. Patients with at least one claim for interferon, fingolimod, dimethyl fumarate, glatiramer acetate, natalizumab or teriflunomide were eligible if naïve or had switched between 2012 and 2017. Naïve were defined as patients without any claim in the previous 365 days. Switchers were defined as patients who changed to other drugs anytime during the study period (2012–2017). The main outcome was persistence, defined as time from initiation to discontinuation of a given DMD, which was considered as a gap in therapy when a subsequent claim for the same drug occurred >90 days after the end of the previous claim. The proportion of persistent patients was reported for 6 and 12 months. Time to event analysis was performed with the Kaplan–Meier estimator and semi-parametric Cox proportional hazard regression model.

Results A total of 87 patients were included with a mean age of 43.0 (SD 10.9), of whom 44.8% (n=39) were naïve and 55.2% (n=48) were switchers. Overall, 55.2% of patients were receiving treatment with injectable drugs (glatiramer acetate 24.1%; interferon 23.0%; natalizumab 8.1%) and 44.8% with oral drugs (fingolimod 19.5%; teriflunomide 18.4%; dimethyl fumarate 6.9%). For the overall sample, median time to discontinuation was 4.5 years. Median time to discontinuation for injectable DMD was significantly lower (median 1.2 years) than for oral DMD (median not reached) (log rank <0.001). The risk of discontinuing treatment was 10.0 times higher for patients receiving treatment with injectable DMD compared with oral DMD (HR=10.0, 95% CI 3.0 to 33.5). The probability of persistence for injectable DMD decreased substantially from 6 months (70.2%, 95% CI 57.2% to 86.1%) to 12 months (52.5%, 95% CI 37.9% to 72.9%).

Conclusion and relevance Treatment with oral drugs was associated with higher persistence in patients with multiple sclerosis.

REFERENCES AND/OR ACKNOWLEDGEMENTS

No conflict of interest.

6ER-013 ENRICHED DEVELOPMENTAL BIOLOGY MOLECULAR PATHWAYS: IMPACT ON ANTIPSYCHOTIC INDUCED WEIGHT GAIN

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Background and importance Psychotropic induced weight gain (PIWG) may lead to an increased risk of cardiovascular diseases, metabolic disorders and, ultimately, treatment discontinuation. Identification of the genetic makeup at risk for PIWG could characterise subjects at risk for this possible severe side effect and help move a step forward in the direction of personalised treatment in psychiatry.

Aim and objectives The hypothesis tested in the study was that PIWG might be genetically driven. Analysis of the complete molecular pathways may grant sufficient power to tackle the biologic variance of PIWG.

Material and methods A genetic sample from the CATIE trial (n=765; 556 men, mean age 40.93±11.03 years) treated with diverse antipsychotic drugs was investigated. A molecular pathway analysis was conducted in an R environment for the identification of the molecular pathways enriched in variations associated with PIWG.

Results The developmental biology molecular pathway was found to be significantly (p adj=0.018) enriched in genetic variations significantly (p<0.01) associated with PIWG. A total of 18 genes were identified and discussed. The developmental biology molecular pathway was involved in the regulation of β cell development, and the transcriptional regulation of white adipocyte differentiation. Interestingly, this finding was a result of a hypothesis free approach.

Conclusion and relevance The results correlate with previous evidence and are consistent with our earlier results in the STAR*D sample. Furthermore, the involvement of β cell development and transcriptional regulation of white adipocyte differentiation pathways stress the relevance of peripheral tissue rearrangement, rather than increased food intake, in the biologic modifications that follow psychotropic treatment and may lead to PIWG. Further research is warranted.

REFERENCES AND/OR ACKNOWLEDGEMENTS

No conflict of interest.