COMPARISON OF FIRST LINE ORAL THERAPIES IN RELAPSING-REMITTING MULTIPLE SCLEROSIS: EFFICACY AND SAFETY OF DIMETHYL FUMARATE VS TERIFLUNOMIDE IN THE CHIETI EXPERIENCE

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BACKGROUND: Multiple Sclerosis (MS) is an inflammatory demyelinating chronic disease of the Central Nervous System (CNS), potentially involving brain, spinal cord and optic nerves. In the last years two new oral drugs, Dimethyl Fumarate (DMF) (Figure 1) and Teriflunomide, have been approved as first line drugs for relapsing-remitting MS (RR-MS). DMF is a diester of fumarate, a substrate in the Krebs cycle with cytoprotective and anti-infiammatory effects. Teriflunomide (figure 2), a metabolite of Leflunomide, is an inhibitor of de novo pyrimidine synthesis, which reversibly decreases proliferation of B and T cells. DMF and Teriflunomide decrease relapse rate, new lesion counts and lesion volume at MRI. Adverse events associated with DMF are flushing, gastrointestinal events, lymphocytopenia, infection, including rare cases of PML, whereas Teriflunomide can cause alopecia, diarrhea, hypertension, peripheral neuropathy, increases of serum alanine aminotransferase, leukopenia and infection.

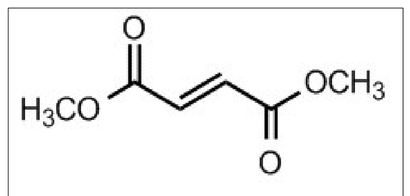
OBJECTIVE: to evaluate efficacy and safety of oral DMF 240mg bid and Teriflunomide 14mg once daily in RR-MS patients in real world clinical practice.

METHODS: we enrolled simultaneously and according to indications 111 patients, naive or switching from other Disease Modifying Drugs (DMD). 53 treated with DMF 240 mg bid and 58 with Teriflunomide,. MS was diagnosed according to McDonald 2010 criteria. Clinical data were collected prospectively and recorded in the iMed database. All patients were evaluated at baseline and at one, three and six months after starting treatment and six-monthly thereafter. Brain and Spinal cord MRI were performed before starting treatment, after six and twelve months of treatment.

RESULTS: Among 53 patients treated with DMF, 88,8% was relapse-free after one year, relapse rate was reduced by 57,6% (Figure 3). 81,13% of patient had side effects (Figure 4) in the first three months: 43,3% gastrointestinal symptoms, 33,9 % flushing, 35,8% lymphocytopenia (94,7% mild, 5,3% moderate). Six patients (11%) discontinued DMF (Figure 5) (50% GI events, 16,6 % allergic reaction, 16,6% alopecia, 16,6 % linphopenia). Relapse-rate in the first six months with Teriflunomide was reduced by 41%, 82.7% of patients was relapse-free after one year (Figure 3). After three months , 62% had side effects (13% mild increase of ALT, 11% mild lymphopenia) (Figure 6). 8 patients (13.7%) discontinued Teriflunomide (3 for increased liver enzymes, 2 for infections, 1 for menorrhagia, 1 for allergic reaction to lactose and 1 for fall nails) (Figure 7).

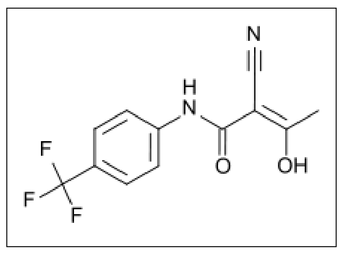
CONCLUSION AND DISCUSSION: DMF and Teriflunomide were efficacious and they were well tolerated by the majority of patients, showing a favorable risk-benefit profile. Therefore they represent a good alternative to first line injectable therapies.

Figure 1



dimethyl fumarate (BG-12)

Figure 2



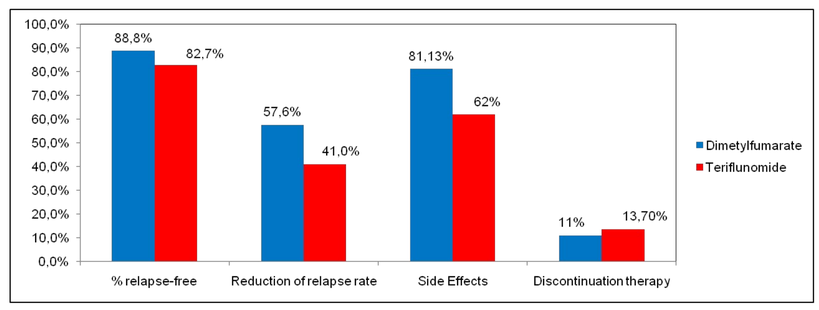


Figure 3

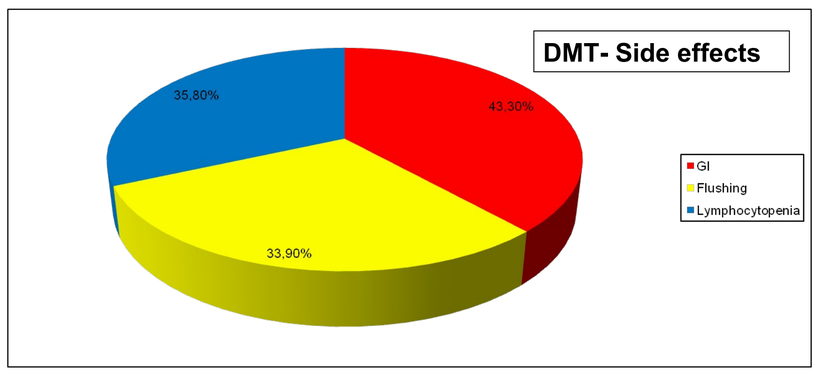


Figure 4

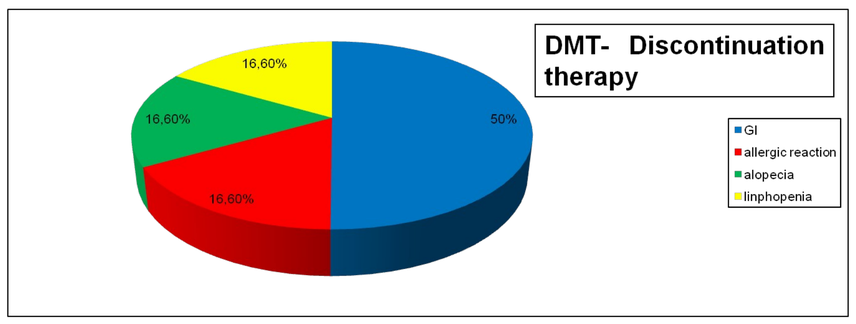


Figure 5

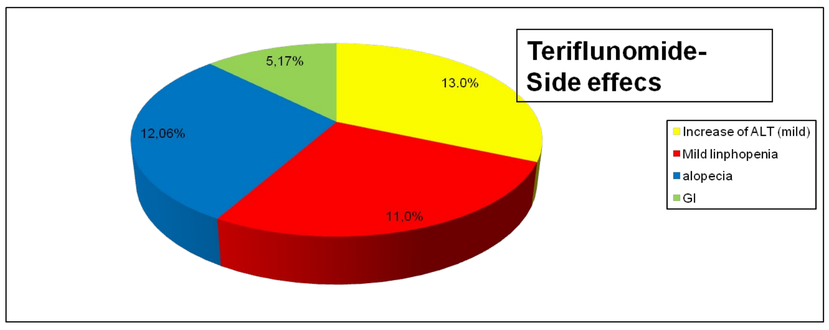


Figure 6

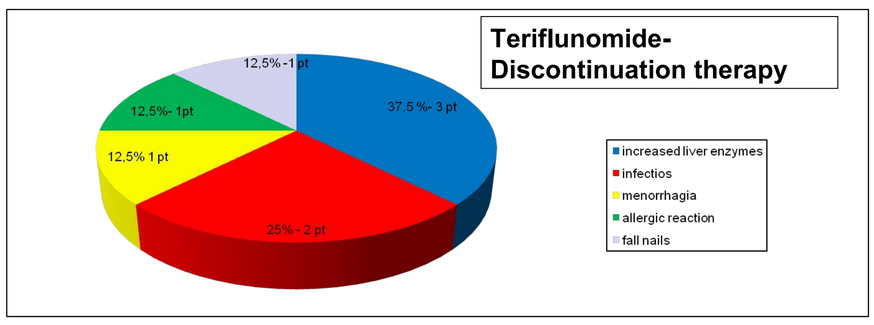


Figure 7

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