INTRODUCTION

• Multiple sclerosis (MS) is universally reported to be more prevalent in women than men. In Tunisia, gender ratio (women/men) has markedly increased in patients with MS since the first reports of Ben Hmidia in 1977 [1].

• The effect of gender on MS prognosis, clinical profile and disability accrual have been reported to be critical [2].

AIM

✓ To investigate the impact of gender on MS characteristics and disease progression in a Tunisian cohort.

METHODS

• A retrospective study was conducted in the department of Neurology of Razi hospital-Tunisia including patients diagnosed with MS according to 2017 McDonald criteria.

• Patients were compared according to gender on various aspects: MS phenotype (relapsing (RRMS), secondary progressive (SPMS) and primary progressive (PPMS)), first attack characteristics, presence of oligodendal bands (OCBs), brain and spine MRI features (during the first year) and disability accrual evaluated by the MS severity score (MSSS) and the Progression index (PI).

• A statistically significant difference was validated if p<0.05.

RESULTS

• A total of 504 patients were included. MS age of onset was comparable between females and males (F=29years; M=30years; p=0.3).

• Female predominance was more pronounced during SPMS and RRMS than during PPMS, but was not statistically significant (p=0.07 table 1).

• Gender did not influence first clinical attack symptoms regardless from MS phenotype (table 1).

• In the RRMS group, gender was correlated with the degree of recovery from the first relapse: partial recovery in 29.4% of males versus 15% of females (p=0.002).

• OCBs positivity and baseline MRI characteristics were also independent from gender (table 2).

• Males exhibited a higher disability accrual according to MSSS (fig 2) but not to PI (fig 3).

DISCUSSION

• Our results highlighted an increased MS susceptibility among females, which was similarly highlighted in the latest version of the atlas of MS [3]. This phenomenon reflects changes in women’s lifestyle: increase in smoking, important use of hormonal contraception and weight gain [4].

• The female predominance, which is generally described during MS, is less commonly reported during PPMS [5].

• The phenotype of the first clinical attack was not associated with a specific gender. However, men may present different symptoms compared to women, being more likely to experience motor symptoms [2].

• OCBs positivity rate was not associated with a specific gender, although a female predominance was described among positive OCBs’ patients in the study of Idiman et al [6].

• MRI features were independent from gender, which was already suggested in the study of Fazekas et al [7].

• Disability accrual was more severe among males.

• This finding is consistent with previously published data which supported that sex hormones might contribute to or modulate brain damage in MS.

• Sex hormones are potent immunomodulators and especially influence the cytokine profile. Estrogens are implicated into shifting T cells towards a Th2 type phenotype (anti-inflammatory response) [8].

CONCLUSIONS

• Age at onset, MS phenotype, first clinical attack characteristics, OCBs positivity rate and imaging features seem not to be influenced by sex-based differences. However, disability accrual is more severe among men.