healthy controls (n = 8) were imaged using PET and the TSPO-binding radioligand ^{11}C-PK11195. Diffusion tensor imaging was performed for assessment of structural integrity of the normal appearing white matter (NAWM) tracts. In addition, we compaired the ex vivo tissue binding characteristics of PK11195 to immunostained cryosections of post mortem autopsy samples from progressive MS patients(n = 5).

Results: PK11195 binding was significantly increased in the perilesional white matter and in the NAWM of SPMS compared to RRMS patients ($p = 0.011$ and $p < 0.001$, respectively). A cut-off value of 1.02 in PK11195 binding in the NAWM separated the RRMS and SPMS groups from each other. The increased radioligand binding in perilesional WM and NAWM correlated to increasing clinical disability measured using EDSS ($p = 0.030$ and $p < 0.001$ respectively). In evaluation of tissue sections, there was increased rim-like perilesional PK11195 signal co-localised with increased microglial/macrophage activation around, but not within the chronic demyelinating lesions.

Conclusion: TSPO PET imaging can be used as a biomarker of diffuse neuroinflammation related to disease progression in MS, and can potentially be utilized to help identify patients entering the progressive phase of the disease.

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Demyelinating Disorders 2
Increased expression of miR-130b-5p in B cells and its modulation by glatiramer acetate in multiple sclerosis

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Objective/Background: B cells are implicated in the pathogenesis of multiple sclerosis (MS). Our objective was to identify microRNAs (miRNAs) expressed in B cells of MS patients applying Next Generation Sequencing (NGS), a high-throughput/sensitive tool to study disease pathogenesis, drug mechanisms, to discover new biomarkers and therapeutic targets.

Design/Methods: B cells and monocytes were separated from healthy donors (HD), untreated and Glatiramer Acetate (GA)-treated MS patients. Expression of more than 2500 mature human miRNAs annotated in miRBase 20 was tested by NGS and validated by RT-qPCR. IRB approval was granted.

Results: 370 and 443 miRNAs were detected in B cells and monocytes, respectively. In B cells and monocytes, respectively, expression of 21 and 12 miRNAs was significantly ($p < 0.05$) different in untreated MS patients compared to HD and expression of 19 and 13 miRNAs was different in GA-treated patients vs. untreated patients. The DIANA-mirPath software analysis identified that Adherent junction and Chemokine signaling (monocytes and B cells) and B cell receptor signaling (B cells) pathways are targets for these miRNAs. Expression of 3 miRNAs (miR-1295a, miR-450a-5p + 1, and miR-130b-5p) was increased in B cells of untreated MS patients and corrected/decreased by GA treatment. Expression levels of miR-130b-5p were increased by more than 100% in untreated MS patients compared to both HD and GA-treated patients based on both NGS and RT-qPCR results, $p < 0.05$.

Conclusion: Expression of miR-130b-5p in B cells is increased in MS patients and is corrected by GA treatment. The physiological significance of this finding will be discussed.

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Demyelinating Disorders 2
Correlation between EDSS and cognitive decline in patients with multiple sclerosis. Pilot study of bicams version in a Brazilian population

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Background: Just like physical disability, the cognitive impairment occurs in a distressing form the patients with Multiple Sclerosis (MS). In addition to the routine approach to physical impairment, it is essential that a methodic and operational neuropsychological assessment be used, which definitely contributes in qualifying care of these patients. Reliable, validated and quick and easy applicable Neuropsychological Tests (TN) by Neurologist in routine visits, are essential tools for follow-up and to detect the need for future therapeutic intervention.

Objective: To investigate the correlation between clinical status of MS patients, measured by the EDSS, and the TN battery of BICAMS (International Brief Cognitive Assessment for Multiple Sclerosis).

Patients and Methods: Fourteen patients with a definitive diagnosis of Relapsing - Remitting MS (RRMS) were included. The results of the EDSS and TN of BICAMS (SDMT, CVLT-II and the BVMT) were obtained retrospectively from medical records of patients included. Pearson correlation coefficients *(r)* and coefficient of determination *(r^2)* were used to estimate the linear association between the variables. All included patients agreed to participate signed previously an Informed Consent Term.

Results: There was a great magnitude correlation between the EDSS, SDMT and BVMT, with $r = 0.69$ and 0.75 *($p < 0.05$)*, respectively. Although not reaching significance criteria, the EDSS and CVLT relationship was moderate and clinically substantial.

Conclusion: The Brazilian version of BICAMS seems to be of easy and satisfactory implementation in routine visit by Neurologists and presents clinically significant correlation with the EDSS. Future studies with wide extension should replicate these initial findings.

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Demyelinating Disorders 2
Genetic variation among multiple sclerosis in Saudi patients

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Background: Pathogenesis of Multiple Sclerosis (MS) is poorly understood, available evidence suggests that both genetic and environmental components may play some roles.

Objectives: To study the genetic predisposition in familial MS in Saudi population.

Material and Methods: Whole Exome Sequencing (WES) was performed in multigeneration family members. Lifescope software was used for analysis which includes filtering low quality reads, alignment against reference genome (Hg19) and variant call. Variants