Objective:
To investigate differences in short-term brain damage accrual in African-American (AA) and Caucasian (CA) participants with relapsing-remitting multiple sclerosis (RRMS).

Background:
In MS, grey matter atrophy spreads to involve more regions over time, following a sequence and a rate of accrual that appear consistent across phenotypes. The validity of these findings in different ethnicities awaits confirmation.

Design/Methods:
MRI data from the CombiRx Trial were retrospectively analyzed (crossectional analysis: 801 subjects, 61 AA; 1-year longitudinal analysis: 592 subjects, 36 AA). Differences in clinical measures and MRI metrics (T2 lesion number-T2LN, supratentorial grey matter volume-SGMV and cerebellar volume-CBLV) were assessed.

Results:
At baseline AA and CA patients did not differ for age, gender, disease duration, EDSS (p>0.05), but AA presented worse 9-HPT, 25-FWT and PASAT scores (p≤0.001). AA patients showed higher T2LN, lower SGMV and CBLV than CA patients at baseline (99.67±60.11 vs 85.28±54.77, p=0.009; 530.69±64.51 vs 566.52±74.08, p<0.0001 and 105.51±10.45 vs 110.50±11.59, p=0.004) and 1-year follow-up (105.80±50.84 vs 88.30±59.62, p=0.010; 499.44±67.05 vs 528.84±60.51, p=0.028,107.10±10.90 vs 112.67±11.79, p=0.097). CBLV was significantly correlated with disability in both groups at both time points. Although T2LN, SGMV and CBLV showed significant changes over time in the entire population (p<0.01), no differences in 1-year percentage changes were present between AA and CA patients (9.53±36.01 vs 5.18±30.82, p=0.419; -1.14±2.47 vs -1.04±2.65, p=0.837 and -0.41±2.27 vs -0.32±2.09, p=0.752).

Conclusions:
AA MS patients showed higher disability and brain damage than CA MS patient, both in the supra- and infratentorial compartment. As AA and CA patients showed similar age, disease duration and short-term damage accrual, the between-group differences observed at baseline suggest that AA experience a faster rate of damage accrual in the very early disease stage, although we cannot exclude that the lack of difference in percentage change might result from the drop-out observed in the AA group.