***Background***. Lublin et al new phenotypes propose clinical and imaging requirements to characterize activity and progression in MS patients. Relapses and MRI findings are well defined parameters for activity but progression remains far from clear cut characterization. No evidence of disease activity (NEDA), an ideal target for long term treatment, includes neither clinical nor imaging signs of disease (NEDA 3), a concept stringently enriched by the inclusion of brain atrophy measurements (NEDA 4).

***Objectives.*** A comparative study on the evolution of MRI brain volumetry on patients with and without clinical signs of disability progression.

***Method***. We studied retrospectively 185 consecutive non selected patients with diagnosis of relapsing remitting MS (McDonald 2001), included from 2001 to 2012, on regular treatment. All patients had at least 3 MRI available studies with proper protocol leading to a reliable evaluation of activity and progression in at least 7 years. Eleven patients were excluded: 3 cases for lost follow up and 8 for insufficient data. Clinical evaluation included annualized relapses rate and EDSS evolution at least annually, for at least 7 years (mean 8.4). MRI data included gadolinium positive lesions or new/enlarging T2W lesion as well as the annualized evolution of corpus callosum index (CCI).

***Results***. From 174 patients of the original sample, 148 were considered clinically “stable” on basis of disability scores measured by EDSS. In this group, 33 (22.2%) showed an annualized reduction on CCI of more than 0.5%, cut off for a significant brain atrophy score in spite of clinically stable.

***Conclusion***. From a population of 148 apparently “stable” MS patients over at least 7 years follow up period, 1/5 of them showed significant progressive brain atrophy. More robust data are required but it seems reasonable to conclude that a regular brain volumetry technique can provide valuable information about the real state of treatment response, selecting these “silent progressive” patients maybe for a switch to more active therapeutic strategy.