BACKGROUND
In an effort to reset the immune system, patients with multiple sclerosis (MS) have been autografted with stem cells; we have shown that these grafts can be performed on an outpatient basis with non-frozen peripheral blood hematopoietic stem cells (PBSC) and a conditioning regimen of cyclophosphamide (Cy) and rituximab, the so-called “Mexican method.”

MATERIALS AND METHODS
Since 2015, all consecutive patients with MS were autografted in two centers in Mexico, following the “Mexican method” (ClinicalTrials.gov identifier NCT02674217), on an outpatient basis and employing PBSC. Mobilization was accomplished with Cy and filgrastim (G-CSF); cumulative dose of Cy was 200 mg/kg. Cy doses were delivered in two separate blocks nine days apart, with the initial aim of mobilizing PBSC and purging lymphoid cells, while the second further purged lymphoid cells and conditioned the graft. After granulocyte recovery, patients were administered rituximab (375 mg/m²) and again (100 mg) every two months, over a 12-mo. period. The extended disability status scale (EDSS) score was assessed every 3 mos. after transplant.

RESULTS
452 patients were autografted; median age was 47 years; time to neutrophil recovery > 0.5 x10⁹/L was 7 days (0-12). The outpatient procedure was completed in 437 patients (96.6%); 15 patients were admitted to the hospital due to neutropenic fever (3), persistent nausea / vomiting (4), iatrogenic pneumothorax (4), dehydration (2), and other causes (2). Transplant related mortality was 1/452. The 12-mo. progression-free survival was 68%. Improvement or stabilization of the EDSS score at 12 mos. was observed in 100%, 72%, and 47% of patients with primary progressive (PP), relapsing remitting (RR) or secondary progressive (SP) forms of MS. In patients with a response, EDSS values decreased significantly from 5.21 ± 0.21 to 3.26 ± 0.24 three mo. after grafting (p = <0.0001) and from 4.54 ± 0.37 to 3.32 ± 0.39 twelve mo. after grafting (p = <0.0001).

CONCLUSIONS
The Mexican autograft method in MS carries a very low morbidity and no mortality, induces neurological responses in MS, even in variants in which other autograft protocols have not proven useful, such as SP-MS and PP-MS. Additional information and follow-up is needed to further support these observations.

REFERENCES
1) Files DK, et al. Multiple sclerosis. Prim Care 2015; 42:159-175