Extended Disability Status Scale (EDSS ≤ 8 in the 2 w pretransplant)
- Karnofsky performance score > 70%

Eligibility criteria included all the following:
1. Relapsing-remitting (RRMS) including those with:
   - No prior immune suppressive drugs
   - ≥ 6 mo since exposure to immune suppressive drugs
   - ≥ 6 mo since use of immunosuppressive medications
   - ≤ 3 mo since use of biologic agents
   - No prior bone marrow toxic drugs
   - CNS magnetic resonance image (MRI) ≤ 3 mo pretransplant
   - Full bone marrow recovery and platelet recovery and TRM. The protocol is registered in ClinicalTrials.gov identifier NCT02674217.

Subjects
To determine if autologous hematopoietic stem cell Transplant can be safely done in an outpatient setting using refrigerated blood cells.

We studied consecutive subjects with MS from June 2015 to December 2018. 194 were male (35%). Median age was 47 y (range, 21-73 y). Median EDSS score was 6 (range, 0 to 8) with an IQR of 5.5-6.0.

Results
We report a method to do autotransplants in persons with MS in an outpatient setting using refrigerated grafts. This approach is safe, reduces costs and increase availability of autotransplant for MS in developing countries. We welcome a randomized trial to validate our conclusions.

Methods
- CNS magnetic resonance image (MRI) ≤ 3 mo pretransplant
- No prior bone marrow toxic drugs
- Normal heart, liver, lung and kidney function
- 25 mo since exposure to immune suppressive drugs
- Primary co-endpoints were granulocyte and platelet recovery and TRM.

Figure 1. Scheme. G-CSF, filgrastim; Cy, cyclophosphamide

Figure 2. Change on EDSS after HSCT by types of MS

Figure 3. Kaplan-Meier overall survival

Table 1. Reasons for hospitalization

Table 2. Change on EDSS after HSCT by types of MS

Conclusion
Outpatient Autotransplants for Persons with Multiple Sclerosis
Gisela B. Gomez-Cruz 1,2, Robert Peter Gale 3, Juan Carlos Olivares-Gazca 1,4, Andres Leon-Bea 1,2, David Gomez-Almaqu 5, Andres Gomez-De-Leon 5, Elias Eugenio Gonzalez-Lopez 2, Alejandro Ruiz-Argüelles 1,4, Elena Soto-Vega 2, Maria Jose Muñoz-Perez 2, Guillermo J. Ruiz-Delgado 1,4,5, Guillermo J. Ruiz-Argüelles 1,4,5

1 Centro de Medicina y Medicina Interna de Puebla, Mexico; 2 Facultad de Medicina, Benemérita Universidad Autónoma de Puebla, Mexico; 3 Division of Experimental Medicine, Imperial College London, United Kingdom; 4 Universidad Popular Autónoma del Estado de Puebla, Mexico; 5 Universidad Autonoma de Nuevo Leon, Hospital Universitario “Dr. José Eleuterio Gonzalez”, Servicio de Hematología, Monterrey, Mexico; 6 Laboratorios Ruiz, Puebla, Mexico; 7 Escuela de Medicina, Universidad Anahuac Puebla, Mexico