Should we consider immune reconstitution for patients with more active MS?

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Currently we face two main approaches in MS therapy. One approach is chronic/maintenance therapy that is given continuously and adjusted to the progress and activity of the disease. Another approach and concept is immune reconstitution therapy (selective or non -selective) inducing immune reset with the potential for drug-free remission. In this approach such drugs like cladribine, alemtuzumab or ocrelizumab may be examples. Cladribine , purine nucleoside analogue, selectively depletes lymphocyte population . The results have shown that cladribine reduces relapse rate, progression of the disease and MRI activity. When administered in short pulsed course, delivered in two cycles. That generates long-lasting lymphopenia and maintained drug-free remission for additional years. The effects are greatest in patients with highly active disease, Cladribine is recommended by EMA in patients with highly active disease in whom the clinical benefits are bigger than risks of long-term lowering in lymphocyte numbers . Treatment with alemtuzumab, anti CD52 monoclonal antibody (two cycles of i.v. administrations) , produces also lymphopenia immune reset and results in disease remission, which can extend beyond period of active treatment Alemtuzumab is used as a second- line treatment and recommended as well in highly active , aggressive forms of MS. The anti CD-20 antibody, ocrelizumab, given every 24 weeks , produces selective depletion of a segment of B cell lineage and is effective in RRMS and beneficial in PP MS. HSCT (haematopoietic stem cell transplantation) shows that antigen receptor repertoire can be altered and is used in aggressive MS.