

Supplement 1 – Data points

Baseline data

- birth date
- gender
- transplantation clinic
- clinical course (RRMS, SPMS or PPMS)
- disease onset
- diagnosis date
- previous DMT(s)
- number and dates of relapses prior to aHSCT
- results and dates of MRI investigations prior to aHSCT
- results and dates of EDSS scoring prior to aHSCT
- wash-out period prior to aHSCT
- comorbidities

aHSCT data

- date of mobilisation
- date of stem cell harvest
- date of admission and discharge for aHSCT
- date of aHSCT
- drugs used in mobilisation and conditioning including dosage
- G-CSF given post aHSCT
- days to engraftment
- intensive care (yes/no) including reason
- body weight at admission and discharge
- plasma-albumin at admission and discharge
- specific days with fever
- clinical diagnosis of infection
- reactivation of CMV, EBV or other herpes viruses
- bacteremia (species)
- culture negative fever
- hemorrhagic cystitis (yes/no)
- days with intravenous antibiotics including substance
- fungal infection (culture or clinical diagnosis)
- serious adverse events grade three or higher according to the CTCAE.

Follow-up data

- number and dates of relapses after aHSCT,
- results and dates of MRI investigations after aHSCT
- results and dates of EDSS and MSIS-29 scoring after aHSCT
- serious adverse events grade three or higher according to CTCAE until day +100
- subsequent DMT
- date of last follow-up.

Supplement 2 - Definitions

Annualised relapse rate

The number of relapses occurring during a time period divided by the number of years in that time period. E.g. 5 relapses occurring in a time period of 2.5 years equals an ARR of 2 ($5/2.5=2$).

Confirmed disability improvement

If baseline EDSS ≤ 5.5 : A decrease in EDSS score with at least 1 point from baseline that is sustained between two follow-up visits separated in time by no less than six months.

If baseline EDSS ≥ 6 : A decrease in EDSS score with at least 0.5 points from baseline that is sustained between two follow-up visits separated in time by no less than six months.

Clinically isolated syndrome

According to the Lublin *et al* criteria from 2014.²⁵

Confirmed disability worsening

If baseline EDSS ≤ 5 : An increase in EDSS score with at least 1 point from baseline that is sustained between two follow-up visits separated in time by no less than six months.

If baseline EDSS ≥ 5.5 : An increase in EDSS score with at least 0.5 points from baseline that is sustained between two follow-up visits separated in time by no less than six months.

Clinical relapse

A period of acute worsening of neurological function lasting ≥ 24 hours not attributable to an external cause such as increased body temperature or acute infection.

EDSS

The Kurtzke Expanded Disability Status Scale (EDSS) is a method of quantifying disability in multiple sclerosis. The EDSS is a composite of disability in eight functional systems.²⁶

Engraftment

ANC 0.5 or higher and TPK >20 and rising, without transfusion of thrombocytes.

MRI event

The appearance of any T2 lesion > 3 mm or gadolinium enhancing lesion in the brain or spinal cord not present on the baseline scan.

Multiple sclerosis, diagnosis

Diagnosis according to the revised McDonald Criteria from 2017.²⁴

No evidence of disease activity (NEDA)

The absence of clinical relapses in addition to absence of confirmed disability worsening and MRI events.

Primary Progressive multiple sclerosis (PPMS)

According to the Lublin *et al* criteria from 2014.²⁵

Progressive disease

According to the Lublin *et al* criteria from 2014.²⁵

Relapsing/remitting multiple sclerosis

According to the Lublin *et al* criteria from 2014.²⁵

Treatment related mortality (TRM)

Death due to any transplantation-related cause other than disease progression.