



Figure S1: Functional systems score (FSS) based relapse recovery model.

Matrix showing stratification of treatment recovery according to function system scores (FSS) at peak deficit and after treatment. In our study, we accepted recovery to baseline FSS as “good recovery” irrespective of this matrix. The matrix was modified from the original variant proposed by Conway and colleagues [13].

	TPE (n=46)	IVMPS (n=99)	total	p-value
treatment-naïve	30 (65.2)	60 (60.6)	90	0.694
beta-interferon ¹	5 (10.8)	9 (9.9)	14	
glatiramer acetate ¹	0 (0)	8 (8.08)	8	
dimethyl fumarate ¹	3 (6.5)	5 (5.05)	8	
teriflunomide ¹	1 (2.2)	2 (2.02)	3	
fingolimod ²	1 (2.2)	4 (4.04)	5	
natalizumab ²	4 (8.7)	6 (6.06)	10	
alemtuzumab ²	2 (4.3)	4 (4.04)	6	
daclizumab ²	0 (0)	1 (1.01)	1	

Table S1: Description of administered disease-modifying treatment at relapse onset. Total patient numbers are shown. P-value was determined using Fisher's exact test.
¹: Substances included in DMT group "approved for mild to moderate RRMS",
²: Substances included in DMT group "approved for active RRMS".

	Odds ratio	95%-confidence interval	p-value
IVMPS vs. TPE (ref.)	39.008	10.423-142.710	<0.001
Age	0.998	0.955-1.044	0.942
Sex (male vs. female (ref.))	1.144	0.446-2.938	0.779
Affected function system (visual vs. others (ref.))	0.939	0.391-2.255	0.939
Disease duration since onset	1.001	0.833-1.203	0.784
Baseline EDSS	0.784	0.450-1.365	0.390
Time to treatment initiation	1.028	0.908-1.164	0.666
Ongoing disease-modifying treatment (yes vs. no (ref.))	0.561	0.185-1.698	0.306

Table S2: Results table from multivariable regression analysis with “worst or no treatment response following first escalation treatment” as dependent variable.

	Odds ratio	95%-confidence interval	p-value
no TPE vs. TPE (ref.)	6.651	2.522-17.540	<0.001
Age	0.978	0.928-1.031	0.408
Sex (male vs. female (ref.))	1.771	0.568-5.524	0.325
Affected function system (visual vs. others (ref.))	0.415	0.146-1.185	0.101
Disease duration since onset	0.999	0.816-1.223	0.994
Baseline EDSS	1.184	0.670-2.093	0.562
Time to treatment initiation	0.932	0.807-1.076	0.334
Ongoing disease-modifying treatment (yes vs. no (ref.))	0.530	0.154-1.819	0.313

Table S3: Results table from multivariable regression analysis with “stable course vs. further deterioration at follow-up” as dependent variable.

covariate	Odds ratio	95%-confidence interval	p-value
TPE as second vs. TPE as first escalation (ref.)	4.628	1.346-15.913	0.015
Age	0.970	0.911-1.032	0.328
Sex (male vs. female (ref.))	0.391	0.106-1.441	0.158
Affected function system (visual vs. others (ref.))	1.553	0.452-5.345	0.485
Disease duration since onset	0.619	0.421-0.910	0.015
Baseline EDSS	1.975	0.969-4.023	0.061
Time to treatment initiation	0.526	0.384-0.721	0.000
Ongoing disease-modifying treatment (yes vs. no (ref.))	1.723	0.378-7.863	0.482

Table S4: Results table from multivariable regression analysis with “development of severe adverse events” as dependent variable.