P848

MS treatment profiles in Germany - insights from two major MS cohorts

D. Ellenberger[1*], B. Gisevius[2], J. Motte[2], P. Flachenecker[3], R. Gold[2], J. Haas[3], K. Hellwig[2], N. Timmesfeld[5], H. Wiendl[3], U.K. Zettl[7], A. Stahmann[1], A. Salmen[2,8]

for the German Multiple Sclerosis Register of the German National MS Society (DMSG) and the German Competence Network Multiple Sclerosis (KKNMS)

1: German MS-Register, MS-Forschungs- und Projektentwicklungs-gGmbH, Hannover, Germany
2: St. Joseph and St. Elisabeth Hospital, Ruhr University, Department of Neurology, Bochum, Germany
3: Neurological Rehabilitation Center Quellenhof, Bad Wildbad, Germany
4: Deutsche Multiple Sklerose Gesellschaft, Bundesverband e.V., Hannover, Germany
5: University Hospital Münster, Westfälische-Wilhelms-University, Department of Neurology, Münster, Germany
6: Ruhr University Bochum, Department of Medical Informatics, Biometry and Epidemiology, Bochum, Germany
7: University Medical Center Rostock, Department of Neurology, Rostock, Germany
8: Department of Neurology, Inselspital, Bern University Hospital and University of Bern, Bern, Switzerland

Background

Disease modifying treatment (DMT) options in Multiple Sclerosis (MS) have significantly increased. These differ in efficacy. A simplified categorization may be the differentiation of basic treatments (BT) and high efficacy treatments (HT). The optimal time point of HT initiation is unclear, data of observational cohorts suggest that early initiation of HT may be beneficial for long-term outcome. Validation of these data in independent cohorts is lacking.

Methods

- NationMS, a prospective observational cohort study, recruited therapy-naive patients with early MS or CIS with regular yearly/bi-yearly visits from 2010 to 2017
- German MS register (GMSR) of the German MS society collects routine clinical data incl. DMT
- Extraction of subcohort of GMSR patients with early disease course, comparable to NationMS
- Analyses for DMT usage and disability (EDSS) within the first 4 years of follow-up (FU).
- DMD efficacy classification according to EMA labels

Results

	NationMS Cohort KKNMS (2010-2020)	German MS Register DMSG comparable subcohort
N	1374	2130
Sex [female, %]	963 (70.1%)	1516 (71.2%)
Age at disease onset (y)	32.8 (±9.7)	34.1 (±10.7)
Age at first diagnosis (y)	33.1 (±9.7)	34.4 (±10.8)
Age at baseline / register entry (y)	33.8 (±9.7)	36.4 (±10.9)

Table 1: Baseline characteristics. Percentages (%), means (± standard deviation [SD]) given as appropriate.

	NationMS	GMSR
DMT usage		
Time to first DMT (median)	121 days	61 days
DMT usage at follow-up 1y (FU1) (%)	869/1172 (74.1%)	1562/2005 (74.1%)
Proportion never treated at follow-up 4y (FU4) (%)	58/761 (7.6%)	113/1234 (9.2%)
Proportion HT as initial DMT	84/1058 (7.9%)	345/2031 (17.0%)
Time from diagnosis to HT (median)	98 days	295 days
% HT within current DMT at FU4 (%)	143/563 (25%)	380/1036 (36.7%)
Disability at follow-up 4y (FU4)		
EDSS (mean ± SD)	1.5±1.2	1.7±1.4
% EDSS ≥3	85/720 (12%)	221/1114 (20%)
% EDSS ≥4	34/720 (5%)	103/1114 (9%)

Table 2: Comparison of cohorts by DMT usage and disease progression.

Objectives

To analyze DMT distribution and sequences within two major MS cohorts in Germany and to assess associated disability outcome.

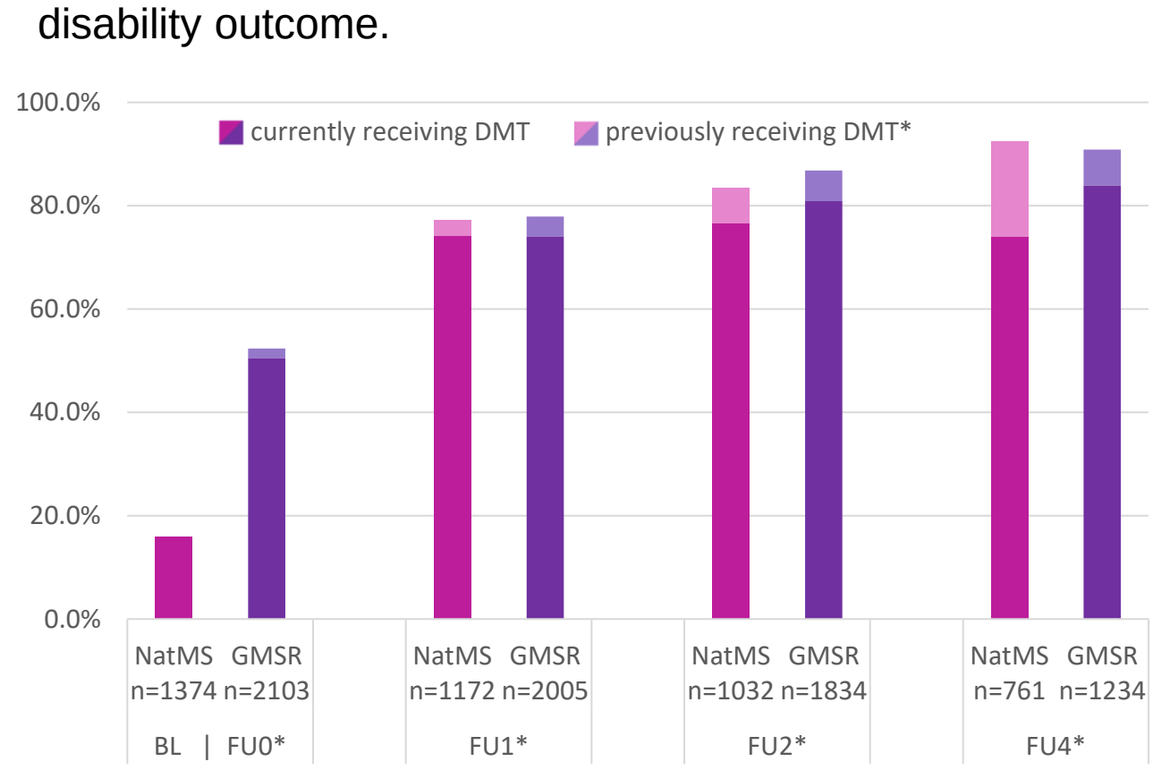

Figure 1: Estimated proportions of patients receiving DMT therapy.
BL: baseline visit in KKNMS (absence of prior DMT is inclusion criterion, % for day1-starters given)
*) Follow-up schemes between registers are different and accounted for by interpolation to reduce bias, i.e., baseline (BL) in KKNMS is compared to a virtual baseline (FU0) in GMSR with similar average disease duration.

	NationMS		GMSR	
Initial DMT n (%)	N=1058		N=2031	
basic treatment (BT)	970 (92%)		1650 (81%)	
Beta-Interferons	534	55%	787	48%
Glatiramer acetate	248	26%	454	28%
Dimethyl fumarate	157	16%	269	16%
Teriflunomide	31	3%	140	8%
high efficacy treatment (HT)	84 (8%)		345 (17%)	
Alemtuzumab	4	5%	37	11%
Sphingosin-1-rec. modulators	35	42%	120	35%
Natalizumab	40	48%	133	39%
Mitoxantrone	1	1%	4	1%
B-cell depletion	3	4%	47	14%
Cladribine	1	1%	4	1%
other	4 (0%)		36 (2%)	

Table 3: DMTs given by BT/HT subgroups.

Conclusions

Whereas overall treatment rates and mean disability level seem comparable between NationMS and GMSR, differences are seemingly present in both treatment algorithms and the proportion of patients with higher disability.

See also

P141 - Comparison of two large German MS cohorts derived from different settings to analyze early disability progression,
J Motte et al., ECTRIMS MS Virtual 2021

Disclosures

DE, BG and NT have nothing to disclose. JM received travel grants and supply from Biogen, Novartis, Celgene (BristolMyersSquibb), Teva and Eisai, his research is funded by Klaus Tschira Foundation, Hertie Foundation and Ruhr-University, Bochum (FoRUM-program). None resulted in a conflict of interest. PF received speaker's fees and honoraria for advisory boards from Almirall, Bayer, Biogen Idec, Celgene, Genzyme, Novartis, Merck, Roche and Teva. None resulted in a conflict of interest. RG serves on scientific advisory boards for Teva Pharmaceutical Industries Ltd., Biogen Idec, Bayer Schering Pharma, and Novartis; has received speaker honoraria from Biogen Idec, Teva Pharmaceutical Industries Ltd., Bayer Schering Pharma, and Novartis; serves as editor for Therapeutic Advances in Neurological Diseases and on the editorial boards of Experimental Neurology and the Journal of Neuroimmunology; and receives research support from Teva Pharmaceutical Industries Ltd., Biogen Idec, Bayer Schering Pharma, Genzyme, Merck Serono, and Novartis. None resulted in a conflict of interest. JH received compensation for presentations and advisory bords from Teva, Hoffmann La Roche, Novartis, Biogen, Bayer, Merck, Octapharma. None resulted in a conflict of interest. KH has received speaking fees, travel support, and research honoraria from Biogen, Teva, Sanofi-Genzyme, Novartis, Bayer Healthcare, Merck Serono, and Roche. None resulted in a conflict of interest. HW receives honoraria for acting as a member of Scientific Advisory Boards Biogen, Genzyme, Merck Serono, Novartis, Roche Pharma AG, and Sanofi-Aventis, UCB as well as speaker honoraria and travel support from Alexion, Biogen, Biologix, Cognomed, F. Hoffmann-La Roche Ltd., Gemeinnützige Hertie-Stiftung, Merck, Novartis, Roche Pharma AG, Genzyme, TEVA, and WebMD Global. He is acting as a paid consultant for Actelion, Biogen, IGES, Johnson & Johnson, Novartis, Roche, Sanofi, and the Swiss Multiple Sclerosis Society. His research is funded by the German Ministry for Education and Research (BMBF), Deutsche Forschungsgemeinschaft (DFG), Else Kröner Fresenius Foundation, Fresenius Foundation, the European Union, Hertie Foundation, NRW Ministry of Education and Research, Interdisciplinary Center for Clinical Studies (IZKF) Muenster and Biogen, GlaxoSmithKline, Roche Pharma AG, Sanofi-Genzyme. None resulted in a conflict of interest. UKZ received speaker honoraria, travel support and/or financial support for research activities from Alexion, Almirall, Bayer, Biogen, Janssen, Merck Serono, Novartis, Octapharm, Roche, Sanofi Genzyme, and Teva as well as from the European Union, Bundesministerium für Bildung und Forschung (Federal Ministry for Education and Research), Bundesministerium für Wirtschaft und Energie (Federal Ministry of Economic Affairs and Energy), and Deutsche Forschungsgemeinschaft (German Research Council). None of these resulted in a conflict of interest. ASt has no personal pecuniary interests to disclose, other than being the lead of the German MS Registry, which receives funding from a range of public and corporate sponsors, recently including The German Innovation Fund (G-BA), The German MS Trust, German MS Society, Biogen, Celgene (BristolMyersSquibb), Merck, Novartis, Roche and Sanofi. None resulted in a conflict of interest. ASa received speaker honoraria and/or travel compensation for activities with Almirall Hermal GmbH, Biogen, Merck, Novartis, Roche and Sanofi Genzyme, and research support of the Swiss MS society. None resulted in a conflict of interest.