

## Erratum to: Progressive multifocal leukoencephalopathy in patients treated with fumaric acid esters: a review of 19 cases

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The correct table is given in the following page.

Unfortunately, the online published article has errors in Table 1. The reference citations were not properly updated in the table.

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**Table 1** Clinical and demographic information of all identified FAE-associated PML cases

Case [Ref]	Age	Sex m = male f = female	Underlying illness and comorbidities <sup>a</sup>	FAE treatment (maximum daily dose)	Other immunosuppressive drugs in previous 5 years (no. of months stopped before PML diagnosis)	Duration of FAE use to lab diagnosis PML, in months	Duration of FAE start to onset symptoms, in months	Duration of lymphopenia to PML symptom onset, in months
1 [7]	42	f	<b>Psoriasis</b>	DMF (420 mg reported-likely 480 mg) <i>Psorinovo</i>	None	67	61	58
2 [6]	74	m	<b>Psoriasis</b>	DMF (240 mg) + MEF (190 mg)	Methotrexate (36)	36	35	26
3 [8, 9]	60	f	<b>Psoriasis</b> ; pulmonary sarcoidosis	DMF (480 mg) + MEF (380 mg) <i>Fumaderm</i>	Prednisolone (41), methotrexate (42)	39	37	20
4 [8, 10]	NA	m	<b>Psoriasis</b> superficial spreading melanoma (surgically removed)	<i>Fumaderm</i>	Efalizumab (±34), steroids topical/tablets (NA)	34	32	NA
5 [28]	69	m	<b>Psoriasis</b> ; arterial hypertension, aortic valve replacement	DMF (720 mg) + MEF (570 mg) <i>Fumaderm</i>	None	58	53	16
6 [25]	64	f	<b>Psoriasis</b>	DMF (720 mg) <i>Psorinovo</i>	Topical steroids (NA), triamcinolone acetonide (>36)	26	24	2
7 [26]	68	m	<b>Psoriasis</b> ; rectal carcinoma (8 years before PML)	DMF (600 mg) + MEF (475 mg) <i>Fumaderm</i>	Topical steroids (NA), 5-fluorouracil (±95)	50	30	27
8 [27]	53	f	<b>Psoriasis</b> ; arterial hypertension, hypothyroidism	DMF (360 mg) + MEF (285 mg) <i>Fumaderm</i>	Topical therapy; not specified	19	16	13
9 [13]	54	f	<b>Multiple sclerosis</b>	DMF (720 mg) <i>Tecfidera</i>	Glatiramer acetate (≥54)	54	53	42
10 [29]	46	m	<b>Psoriasis</b> ; SLE	DMF (NA—stopped 5 months before onset PML) <i>Fumaderm</i>	Cyclophosphamide (up to PML diagnosis)	6	NA	NA
11 [29]	54	f	<b>Psoriasis</b>	<i>Fumaderm</i>	None	6	NA	NA
12 [14]	61	f	<b>Multiple sclerosis</b>	DMF <i>Tecfidera</i>	Natalizumab (24)	22	NA	6

**Table 1** continued

Case [Ref]	Age	Sex	Underlying illness and comorbidities <sup>a</sup>	FAE treatment (maximum daily dose)	Other immunosuppressive drugs in previous 5 years (no. of months stopped before PML diagnosis)	Duration of FAE use to lab diagnosis PML, in months	Duration of FAE start to onset symptoms, in months	Duration of lymphopenia to PML symptom onset, in months
<b>13</b> [24]	58	m	<b>Multiple sclerosis</b> ; hypertension, hypercholesterolaemia, Paroxysmal atrial fibrillation	DMF <i>Tecfidera</i>	None	24	16	9.5
<b>14</b> [24]	57	m	<b>Psoriasis</b> ; hypertension, chronic atrial fibrillation, actinic keratosis	DMF + MEF <i>Fumaderm</i>	NA	50	48	47
<b>15</b> [24]	50	f	<b>Psoriasis</b> ; depression, Nicotine abuse, gonarthrosis left knee	DMF (120 mg) + MEF (95 mg) <i>Fumaderm</i>	NA	112	110	72
<b>16</b> [23]	71	m	<b>Psoriasis</b>	DMF (120 mg)	NA	25	19	NA
<b>17</b> [30]	59	m	<b>Multiple sclerosis</b>	DMF <i>Tecfidera</i>	Interferon-β (12)	17	12	8
<b>18</b> [31]	64	m	<b>Multiple sclerosis</b>	DMF <i>Tecfidera</i>	None	26	23	14
<b>19</b> [24]	64	f	<b>Psoriasis</b> ; breast carcinoma (10 years before PML), hypertension, nicotine abuse, hyperthyroidism, partial thyroidectomy, myocardial infarction	DMF (120 mg) + MEF (95 mg) <i>Fumaderm</i>	Topical steroids (NA), cyclophosphamide (NA)	7	6	NA

  

Case	Lymphopenia grade <sup>b</sup>	Range of lymphocyte counts, per mm <sup>3</sup>	Lymphocyte subsets at PML diagnosis, per mm <sup>3</sup>	CD4/CD8 ratio	Initially misdiagnosed as stroke?	Lab diagnosis of PML (detection of JCV)	PML-IRIS	Duration FAE stop to PML-IRIS, in weeks	Outcome
<b>1</b>	Grade 3	200–500	Lymphocytes: 200; CD4: 40; CD8: 20; B cells: 98	2	NA	CSF	Yes	4	Survived
<b>2</b>	Grade 3	410–450	Leukocytes: 4600; lymphocytes: 410; CD4: 143; CD8: 23	>6	Yes	CSF + brain biopsy	Yes	5	Survived
<b>3</b>	Grade 2–3	>445	NA	NA	NA	NA	NA	NA	Survived
<b>4</b>	Grade 1–2	450–800	CD4: 131; CD8: ±130	1	No	CSF	No	NA	Survived
<b>5</b>	Grade 2	724–738	Leukocytes: 4800; lymphocytes: 288	NA	No	CSF	Yes	4	Survived
<b>6</b>	Grade 1	792–1000	Leukocytes: 4000; lymphocytes: 792; CD4: 270; CD8: 40	>2	Yes	Brain biopsy (CSF JCV negative)	Yes	4	Death
<b>7</b>	Grade 2	500–1000	Lymphocytes: 670; CD4: 154; CD8: 117	1	Yes	Brain biopsy (CSF JCV negative)	Yes	±12	Survived
<b>8</b>	Grade 2	450–700	Leukocytes: >3000; lymphocytes: 450–700	NA	No	CSF + brain biopsy	No	NA	Survived
<b>9</b>	Grade 2–3	290–580	NA	NA	NA	CSF	No	NA	Death
<b>10</b>	Grade 3	NA	Leukocytes: 5580; lymphocytes: 246; CD4: 13; CD8: 14	1	NA	CSF	No	NA	Death

Table 1 continued

Case	Lymphopenia grade <sup>b</sup>	Range of lymphocyte counts, per mm <sup>3</sup>	Lymphocyte subsets at PML diagnosis, per mm <sup>3</sup>	CD4/CD8 ratio	Initially misdiagnosed as stroke?	Lab diagnosis of PML (detection of JCV)	PML-IRIS	Duration FAE stop to PML-IRIS, in weeks	Outcome
11	Grade 3	NA	Lymphocytes: 481; CD4: 106; CD8: 38	>2	NA	Brain biopsy	No	NA	Survived
12	Grade 2	600	NA	NA	No	NA	NA	NA	Survived
13	Grade 3	476–486	NA	NA	No	Brain biopsy	No	NA	Survived
14	Grade 1–3	>391	Lymphocytes: 1148; CD4: 391; CD8: 72; B cells: 583; NK cells: 161	>5	Yes	CSF	NA	NA	Survived
15	Grade 2–3	398–631	Lymphocytes: 584; CD4: 202; CD8: 54; NK cells: 177	>3	NA	CSF	Yes	±4	Survived
16	Grade 3	420	NA	NA	No	Brain biopsy	No	NA	Survived
17	Grade 2–3	414–728	Lymphocytes: 414	NA	No	Brain biopsy + CSF	Yes	NA	Survived
18	Grade 3	NA	CD4: 96; CD8: 14	6.77	No	CSF	No	NA	Survived
19	Grade 3	414	Leukocytes: 6670; lymphocytes: 414	NA	No	CSF	No	NA	Survived

FAE fumaric acid ester, PML progressive multifocal leukoencephalopathy, IRIS immune reconstitution inflammatory syndrome, DMF dimethyl fumarate, MMF monomethyl fumarate, CSF cerebrospinal fluid, JCV JC virus, NA not available

<sup>a</sup> In bold is the illness for which FAE treatment was given

<sup>b</sup> Grade 1 lymphocytopenia = 800–1000 cells per mm<sup>3</sup>; grade 2 lymphocytopenia = 500–800 cells per mm<sup>3</sup>; grade 3 lymphocytopenia ≤500 cells per mm<sup>3</sup>