Supplementary file 1 – Selected studies on the use of RTX in AChR-MG.
AChR Ab, acetylcholine receptor antibodies; AChR-MG, anti-AChR-Ab+ serotype of MG; AZA, azathioprine; IVIg, immunoglobulin; M, month; MG, Myasthenia Gravis; M6, 6-month; MM, minimal manifestation; MMS, myasthenic muscle score; MMT, manual muscle testing; PML, progressive multifocal leukoencephalopathy; RTX, Rituximab; WBC, white blood cell count; *patients with thymoma; NR, not reported.

Author, year, type of study	AChR-MG/total MG patients	Rituximab dose and frequency	Side effects	Follow-up	Anti-AChR Abs titres	Clinical outcomes
Choi et al, 2019 [15] Retrospective study	9/17 (4*)	(375 mg/m$_2$ twice with a 2-week interval), followed by retreatment (375 mg/m$_2$ once). Retreatment based on CD19 or relapse	Two patients experienced infusion reactions, chest discomfort in one patient, and skin rash in the other. During follow up, one patient was affected by herpes zoster.	24 months (range, 7–49 months),	Not monitored	5 of 9 AChR MG achieved the MM or better status with low-dose prednisolone (5 mg per day)
Roda et al, 2019 [1] Retrospective study	10/27 (NR*)	375 mg/m$_2$ weekly for 4 consecutive weeks or rarely 1000 mg at weeks 1 and 3. Retreatment based on clinical course.	One AChR + patient developed neutropenia after the 6$_{th}$ infusion, diverticulitis in another AChR + patient. Minor infusion reactions were not uncommon.	Not specified	AChR titres decreased following RTX treatment but the response was slower.	MM status or better was achieved in 4/10 AChR + patients. IVIg was discontinued in 2/4 AChR + patients. 2/2 AChR + patients still receive plasma exchange, one of whom at lower frequencies of exchange. The daily prednisone dose was significantly reduced from 19.6 to 10.0 mg in the AChR patients.
Topakian et al 2019 [16] Retrospective study	39/56 (8*)	Induction therapy consisting of two RTX infusions within 2 weeks at a dose of 2 × 375 mg/m$_2$ body surface area, 2 × 500 mg fixed dose or 2 × 1000 mg fixed dose. RTX infusions were repeated for the reappearance of B-cells in peripheral blood or for clinical deterioration. Only 3 patients underwent a preplanned fixed-time/fixed-dose maintenance therapy protocol.	Infusion reactions, respiratory tract infections, chronic pain syndromes, enteritis, herpes zoster, erysipelas, cholecystitis, unspecified mental disorder, and alopecia areata. One patient died 4.5 months after the start of RTX for an assumed cardiac cause.	20 (10,53) months	20 patients (35.8%) had antibody levels retested after start of RTX. 13 (65%) of these patients showed some decrease of antibody levels, but this seemed unrelated to outcome.	At last follow-up, remission was achieved in 35.9% (14/39) of AChR ab+ patients. An outcome of MM or better was achieved in 64.1% (25/39) of AChR ab + patients. 33 of 39 (86.4%) patients who were still taking steroids at the time of RTX start had steroid stopped altogether (n=23) or the dose had been tapered to 50% or less (n=10).
Landon-Cardinal et al, 2018 [17] Prospective phase II study	12/12 (0*)	Enrolled patients received 1g of RTX at day 0, day 14 and 6 months follow-up (M6)	6 cases of infection mild to moderate in severity except one episode of gastroenteritis which required hospitalization. One patient withdrew from the study at week 3 for peripheral oedema the day following each RTX infusion (he suffered from severe cardiac failure).	18 months	All patients had antibody levels retested after start of RTX. Titres showed a decrease at M12 (30.85 nmol/l) from baseline (49.15 nmol/l), but this did not correlate with clinical outcome.	Beneficial effects in half of patients: only one patient had improvement of at least 20 points in MMS at M12, although 2 patients displayed an increase of at least 18 points at M12. At M18 the patient who had achieved the primary end point maintained his improvement and 3 other patients reached 20 points increase in MMS. Clinical improvement not associated with a reduction of immunosuppressant burden
Beecher et al, 2018 [6] Prospective open-label study	10/22 (NR*)	Regimen 1: infusions of 375 mg/m$_2$ once a week for 4 weeks and once every 4 weeks for 2 additional infusions. Regimen 2: infusions of 750 mg/m$_2$ given twice with an interval of 2	3 cases of mild post-infusion headache	28.8±19.0 (6-66) months	Not monitored	AChR patients showed mean MMT reduction from 10.3±5.1 to 5.5±2.6 (P=0.018) (P<0.0001). 2 of 4 AChR patients requiring mainteinance IVIg or PLEX prior to RTX, required continuation at last follow-up.

		weeks. In case of relapses a maintenance regimen of 2 doses of 750 mg/m_2 with an interval of 2 weeks was given.				
Jing et al, 2017 [12] Prospective open-label study	8/8 (5*)	Total 600 mg of RTX: 100 mg on the first day and 500 mg on the second eventually repeated every 6 months according to the clinical status.	No allergic reactions or other serious effects.	6 months	All patients had antibody levels retested after 6 months from the start of RTX. Serum AChR levels showed a decrease in two patients, but they were independent of clinical response	At M1 MMT was -9.88. At M3 MMT was -19.3. At M6 MMT was -22.3. Doses of prednisone were reduced by 43% (P=0.018) at 6 months in all 8 patients. If taking the 3 patients with repeat cycles together, the prednisone doses were reduced by 56% at the final visit (6-15 months after initial infusion). None of the patient were able to free from prednisone entirely during the study.
Afanasiev et al, 2017 [7] Retrospective study	21/28 (8*)	Mean total dose of 4.8±2.5 g. Regimen 1: infusions of 1000 mg given twice with an interval of 2 weeks. Regimen 2: 375 mg/m_2 on day 1,7,15 and 21. Maintenance regimen of 1000 mg or 375 mg/m_2 infusion with a periodicity of 6 months was given.	11/28 patients had benign side effects as bronchitis, flu-like syndrome, immediate hot flashes and paraesthesias. 4 patients presented severe side effects: one developed transient aseptic neutropenia, another presented paroxysmal atrial fibrillation and a third had an infectious pneumonia. A fourth developed PML.	27.2 (6-60) months	Not monitored	Significant improvement in MG scores at M6 and remained stable until M36. Reduction of more than 50% of steroid dosage. Efficient in 50% of MG patients resistant to immunosuppressant.
Robeson et al, 2017 [11] Retrospective study	16/16 (5*)	Cycles of 4 weekly infusion of 375 mg/m_2. Patients were treated with 2 to 4 cycles, on the basis of reaching a symptom-free status without toxicity.	No infusion reactions. One case of leukopenia (WBC=2700/µL).	18-84 months	Significant decrease in anti-AChR antibody levels after treatment until the last follow-up (with the exception of patients who experienced a relapse).	7/16 patients remained clinically stable with follow-up ranging from 18 to 81 months. 9/16 patients experienced a relapse in a mean of 36 (range 24-47) months after the last RTX treatment cycle: 4 receiving 2 cycles had a relapse within a mean follow-up of 33 months. The 4 patients receiving 3 cycles had a relapse within a mean follow-up of 36 (range 29-44) months. A patient receiving 4 cycles had a relapse at 47 months. There was a reduction of prednisone, AZA or IVIg in all patients but 13 underwent a thymectomy.
Anderson et al, 2016 [18] Prospective open-label study	5/14 (NR*)	RTX was either administered at a dose of 375 mg/m_2 every week for 4 consecutive weeks, then monthly for 2 months or at a dose of 750 mg/m_2 every 2 weeks for 1 month	RTX infusions were well tolerated, with only 3 patients complaining of post-infusion headaches which resolved with standard anti-inflammatory drugs.	22.6±2.4 months	Not monitored	At the end of the follow-up period, 2/5 AChR + patients were still taking prednisone.
Diaz-Manera et al, 2012 [13] Retrospective study	11/17 (NR*)	Cycles of 4 weekly infusion of 375 mg/m_2. Repeated infusions were administered when myasthenic symptoms reappeared.	Facial flushing and a generalized skin rush during the infusion. No serious side effects.	31 (4-60) months	AChR MG patients had antibody levels retested after start of RTX. Antibody levels were variable and did not decrease	10/11 AChR + patients had improved at 3-month follow-up. 6/10 required reinfusion after a mean period of 17 months, improving again (but none reached a MM status or remission). Reduction in the average dose of prednisone (from 30.5 to 17.2 mg/day) in

					significantly.	10 of the 11 AChR MG patients.
Nowak et al, 2011 [2] Retrospective study	6/14 (NR*)	Cycles of 4 weekly infusion of 375 mg/m2. Interval between cycles was set at 6 months.	Infusion reactions: pruritis, flushing, dyspnea, chills/rigors. Relative leukopenia in one patient, which later resolved.	12 months	AChR MG patients had antibody levels retested after start of RTX. Antibody levels decreased a mean of 40.2%, 52.1% and 67% post treatment cycle 1,2 and 3 respectively.	Significant clinical improvement, decrease in number of required plasma exchange sessions and in the average dose of prednisone (65% after cycle 1, 85% after cycle 2 and 94% after cycle 3).
Blum et al, 2011 [9] Retrospective study	11/14 (3*)	Infusions of 1000 mg given twice with an interval of 2 weeks. One patient had 4 doses of RTX 500 mg weekly, one day afterplasma exchange. Another patient had one dose of 500 mg only. Retreatment with RTX was initiated if there was recovery of B lymphocyte count over 1% on two separate occasions together with clinical signs of relapsing disease. 4 patients underwent 2 cycles. A patient had a 3rd retreatment.	Infusion reactions: flu-like syndrome, warm sensation, hypertension. There was a case of persistent alteration of sweet taste and eosinophilia (presumed reactivation of giardiasis) and a case of reactivation of herpes zoster which responded to aciclovir.	14.2 (4-47) months	AChR MG patients had antibody levels retested after start of RTX. Antibody levels significantly decreased in 3 patients (< 8 nmol/l), of whom 2 improved.	3/11 AChR + patients had MM status and 5 others had functional improvement but still had ongoing signs and symptoms of MG. 3 AChR + patients remained clinically unchanged but in 2/3 other medications were able to be reduced.
Maddison et al, 2011 [14] Retrospective study	7/10 (1*)	Cycles of 4 weekly infusion of 375 mg/m2. Additional monthly infusion in 3 patients	Infusion reactions: fever, rigours.	18 (12-48) months	Not monitored	Clinical improvement in 3 of 7 patients (two with stable remission). One developed worsening myasthenic symptoms following RTX and the other 3 patients were unchanged.