COVID-19 Outcomes and Vaccination in People with Relapsing Multiple Sclerosis Treated with Ofatumumab

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Table S1. Proportion of patients who received partial or complete vaccination among the 1703 enrolled patients from ALITHIOS

Manufacturer	Vaccine platform	Recommended doses	Any vaccination n (%)	Partial vaccination[a] n (%)	Complete vaccination[b] n (%)
			559 (32.8)	74 (4.3)	476 (28.0)
Moderna US, Inc.	RNA based vaccine	2	81 (4.8)	11 (0.6)	70 (4.1)
Pfizer-BioNTech	RNA based vaccine	2	353 (20.7)	43 (2.5)	310 (18.2)
Oxford-AstraZeneca	Viral-vector (non-replicating)	2	48 (2.8)	9 (0.5)	39 (2.3)
Janssen	Viral-vector (non-replicating)	1	17 (1.0)	1 (0.1)	16 (0.9)
Chumakov Federal Scientific Center for Research and Development of Immune-and-Biological Products	Inactivated virus	2	3 (0.2)	1 (0.1)	2 (0.1)
Gamaleya National Institute of Epidemiology (Sputnik Light)	Viral-vector (non-replicating)	1	2 (0.1)	0	2 (0.1)
Gamaleya National Institute of Epidemiology (Sputnik V)	Viral-vector (non-replicating)	2	26 (1.5)	6 (0.4)	20 (1.2)
Vector Center of Virology	Protein subunit	2	3 (0.2)	1 (0.1)	2 (0.1)
Sinopharm	Inactivated virus	2	2 (0.1)	0	2 (0.1)
Sinovac	Inactivated virus	2	5 (0.3)	2 (0.1)	3 (0.2)
Mixed[c]		2	10 (0.6)	0	10 (0.6)
Unspecified			9 (0.5)		

[a]Partially vaccinated: At least 1 dose is taken, but either not all recommended doses are taken or it has been <14 days after completion of all recommended doses of a COVID-19 vaccine.
[b]Fully vaccinated: Per CDC guidelines, ≥14 days after completion of all recommended doses of a COVID-19 vaccine, 27 patients received a booster vaccination after being fully vaccinated.
[c]Mixed includes patients with COVID-19 vaccines from at least 2 different manufacturers where the recommended dose is 2 for each mixture component.
[d]Patients with unknown/unspecified COVID-19 vaccines are not displayed under partial or complete vaccination because this status cannot be determined without knowing the vaccine type.
CDC, Centers for Disease Control and Prevention; COVID-19, coronavirus disease.

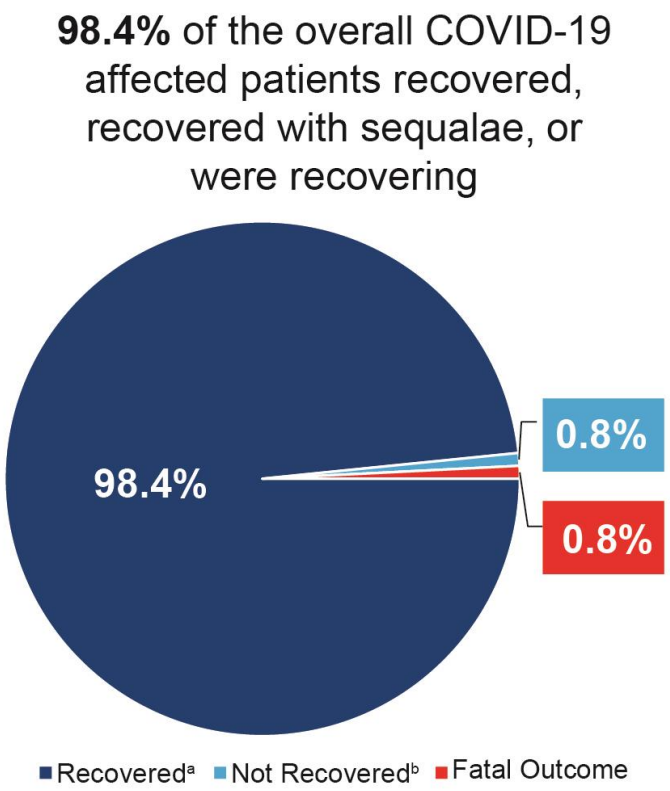
Figure S1. Assessment criteria for the diagnosis, seriousness, and severity of COVID-19 cases in ALITHIOS and post-marketing reports along with outcome categories

Fig. S1. Assessment criteria for diagnosis, seriousness and severity of COVID-19 cases in ALITHIOS and post-marketing reports along with outcome categories

	Open-label phase 3b ALITHIOS study (Assessed by investigators)	Post-marketing setting (Adjudicated by the independent experts)
Diagnosis		
Confirmed COVID-19	A positive lab test including RT-PCR, antigen detection or serological evidence of infection	A positive lab test result or if the patient was reported to have been diagnosed with COVID-19
Suspected COVID-19	Absence of a positive SARS-CoV-2 lab test but with signs and symptoms consistent with COVID-19	Without a positive test or a definitive diagnosis
Severity (based on CTCAE v5.0 for ALITHIOS; WHO and FDA for PMS)		
Asymptomatic	Covered under mild	Infection without symptoms
Mild	Asymptomatic or mild symptoms; clinical or diagnostic observations only; intervention not indicated	Not requiring hospitalization, symptoms did not include dyspnea
Moderate	Minimal, local or noninvasive intervention indicated; limiting age appropriate instrumental activities of daily living (ADL)* *Instrumental ADL refer to preparing meals, shopping for groceries or clothes, using the telephone, managing money, etc.	Hospitalization with pneumonia not reported to be severe and/or with respiratory rate [RR] >20 and/or oxygen saturation [SpO_2] >90%, shortness of breath or dyspnea, hospitalization less than 7 days without further details
Severe	Severe or medically significant but not immediately life-threatening; hospitalization or prolongation of hospitalization indicated; disabling; limiting selfcare ADL** **Selfcare ADL refer to bathing, dressing and undressing, feeding self, using the toilet, taking medications, and not bedridden	Pneumonia reported as severe – RR ≥30, SpO_2 ≤93%, hospitalization 7 days or more without further details
Life-threatening or critical	Life-threatening: life-threatening consequences; urgent intervention indicated	Critical: respiratory failure and/or intubation
Seriousness (for both based on ICH- E2A for ALITHIOS and E2B for PMS)		
Serious	A serious AE is defined as any AE appearance of (or worsening of any pre-existing) undesirable sign(s), symptom(s) or medical conditions(s): • is fatal or life-threatening • results in persistent or significant disability/incapacity • constitutes a congenital anomaly/birth defect • requires inpatient hospitalization or prolongation of existing hospitalizations • is medically significant, e.g. defined as an event that jeopardizes the subject or may require medical or surgical	• Fatal • Hospitalization • Life-threatening • Medically significant: important medical event that may not be immediately life-threatening or result in death or hospitalization but may jeopardize the patient or may require intervention to prevent one of the other serious outcomes)
Outcome categories	• Recovered, recovered with sequelae, or recovering • Not recovered • Fatal	• Recovered or recovering • Condition unchanged • Condition deteriorated • Fatal • Outcome not reported

For ALITHIOS cases, COVID-19 seriousness category was based on the regulatory reporting definition established by International Council for Harmonisation of Technical Requirements for Pharmaceuticals for Human Use (ICH)-E2A guidelines; COVID-19 severity assessment was based on the National Cancer Institute's Common Terminology Criteria for Adverse Events (CTCAE [v5.0]) grading system as described in the protocol.
For post marketing cases, COVID-19 seriousness category was based on the ICH regulatory reporting definition. The severity assessment was adjudicated by independent experts (BJW and BACC) using the US Food and Drug Administration (FDA) and World Health Organization (WHO) COVID-19 severity scales and where data were available.

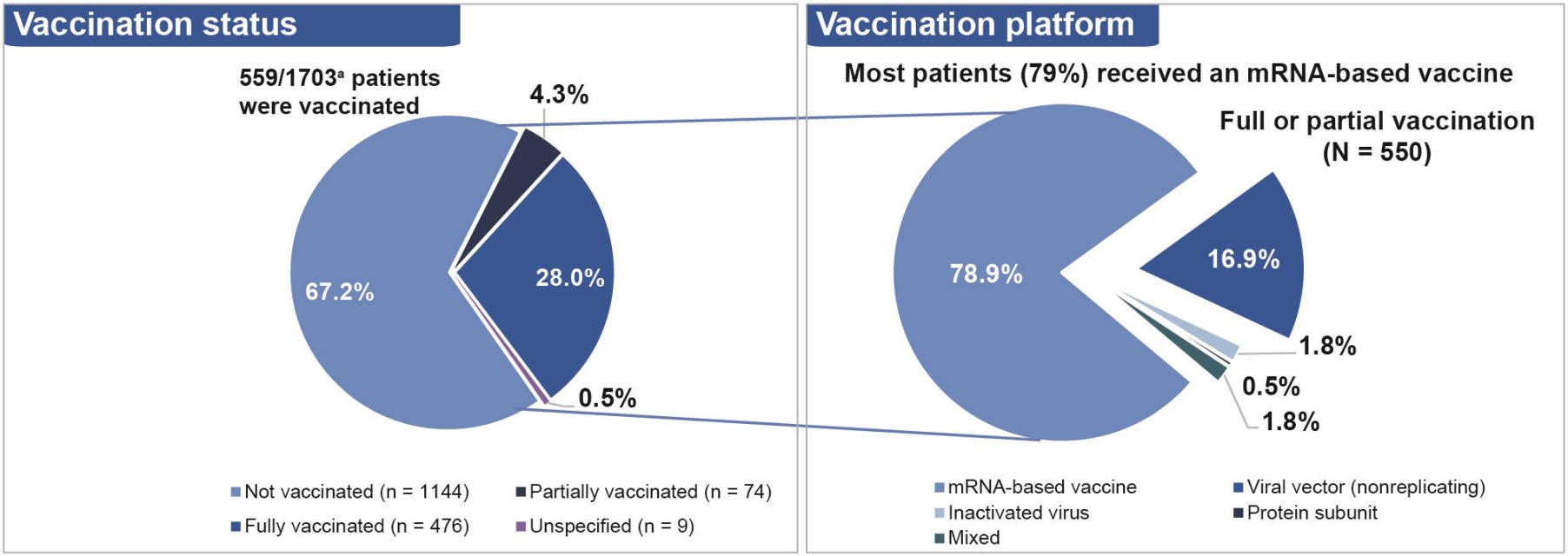
Figure S2. Outcomes COVID-19 in the 245 ofatumumab-treated patients with RMS in the open-label ALITHIOS study



[a]recovered includes recovered or recovered with sequalae or recovering at the time of data cutoff; [b]at the time of data cutoff

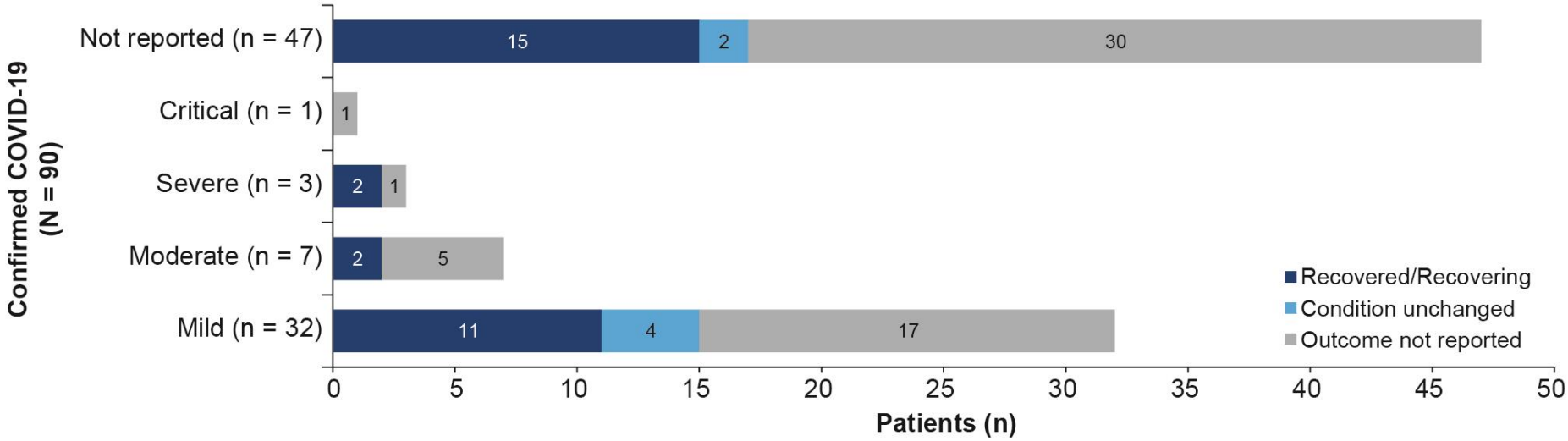
COVID-19, coronavirus disease; RMS, relapsing multiple sclerosis.

Figure S3. Coronavirus disease **(**COVID-19) vaccination status and vaccine platform in the open-label ALITHIOS study



[a]1703 represents enrolled population in ALITHIOS study. mRNA, messenger ribonucleic acid.

Figure S4. Outcomes by severity of COVID-19 in the 90 ofatumumab-treated patients with RMS from spontaneous post-marketing reports



Severity was assessed using the WHO and US FDA guidelines. No patients were asymptomatic.

COVID-19, coronavirus disease; RMS, relapsing multiple sclerosis; US FDA, United States Food and Drug Administration; WHO, World Health Organization.