

Supplementary Table S1. Study characteristics of included rhabdomyolysis case reports and case series.

Lead author	Country	Age (years)	Gender	Past medical history	Peak CK (IU/L)	Baseline LDH (U/L)	Baseline CRP (mg/dL)	Baseline AST (U/L)	Baseline ALT (U/L)	Possible or Confirmed Cardiac involvement	Mechanical Ventilation	Haemo-filtration	Outcome
Alrubaye (14)	USA	35	Female	Nil	29117	401	N/S	475	140		No	No	Discharged
Anklesaria (15)	USA	57	Male	Obesity, HTN, Dyslipidaemia	1083744	N/S	>32	3995	751	Elevated troponin	Yes	Yes	Died
Anwar (16)	Oman	16	Male	Previous episode of rhabdomyolysis	N/S	N/S	N/S	N/S	N/S		N/S	N/S	Died
Aria (17)	Iran	50	Male	Hypothyroidism	41180	526	2	33	10		Yes	Yes	Brain death
Armanpoor (18)	Iran	10	Male	Nil	8000	500	20	117	Normal		No	No	Discharged
Azeem (19)	USA	67	Male	HTN, DM, gout, prostate cancer	40000	NR	NR	NR	NR	Acute coronary syndrome	Yes	Yes	Died
Bach (20)	USA	<18	Male	Anaphylaxis with associated rhabdomyolysis, Obesity	64560	N/S	N/S	N/S	N/S		N/S	N/S	Discharged
Buckholz (case 1) (21)	USA	43	Male	Nil	N/S	N/S	15.6	1474	N/S		Yes	No	Discharged
Buckholz (case 2)	USA	37	Male	Nil	82960	N/S	7.4	902	N/S		No	No	Discharged
Buckholz (case 3)	USA	75	Male	Deep Vein Thrombosis	3638	N/S	15.7	56	N/S		Yes	No	Discharged
Buckholz (case 4)	USA	59	Male	Nil	8310	N/S	20.4	186	N/S		Yes	No	Died
Buckholz (case 5)	USA	66	Male	HTN	10100	N/S	21.3	263	N/S		Yes	Yes	Discharged
Buckholz (case 6)	USA	70	Female	Multiple myeloma, Chronic Kidney Disease	406300	N/S	9.2	>6000	N/S		Yes	Yes	Died
Byler (22)	USA	67	Female	HTN, DM, hyperlipidaemia	15085	NR	NR	749	337		Yes	Yes	Discharged
Cassim (23)	South Africa	12	Female	Nil	22000	2500	221	2227	457		Yes	Yes	Discharged
Chan (case 1) (24)	USA	75	Female	HTN, Chronic Kidney Disease, Seizures	2767	N/S	3.7	198	63	Elevated troponin	N/S	N/S	Discharged
Chan (case 2)	USA	71	Male	HTN, Coronary Artery Disease, GORD	1859	N/S	18.8	N/S	N/S	Acute Coronary Syndrome	No	Yes	Remains in hospital
Chedid (25)	USA	51	Male	HTN, DM, Chronic Kidney Disease, Sleep apnoea	339500	>2150	64.4	715	122	Elevated troponin	Yes	No	Discharged on haemodialysis
Chiba (26)	Japan	36	Male	Nil	18205	220	3.17	N/S	N/S		Yes	Yes	Discharged
Chong (27)	USA	37	Male	Nil	35000	1300	60	N/S	N/S		No	No	Died
Cunha (28)	Portugal	46	Female	Breast cancer	87456	173	0.9	14	16		N/S	N/S	Discharged
Dodig (29)	Canada	36	Male	Nil	11000	N/S	N/S	N/S	N/S		No	No	Still unwell
Fabi (30)	Italy	6	Female	Nil	3392	NR	24.86	NR	NR	Elevated troponin	No	No	Discharged
Fadel (31)	USA	33	Male	Nil	362445	4000	4.32	1835	190		No	No	Discharged
Fadiran (32)	USA	78	Female	Hypothyroidism, Bipolar disorder, Dyslipidaemia	10650	550	N/S	N/S	N/S	Myocarditis	No	No	Discharged
Farouji (33)	Israel	21	Male	Nil	53886	N/S	35.3	653	182		No	No	Discharged
Flato (34)	Brazil	18	Female	Obesity	23735	455	N/S	99	N/S		Yes	Yes	Died
Foster (35)	USA	40	Male	Obesity, HIV	2185	N/S	N/S	18	50		Yes	No	Discharged
Fujimaru (36)	Japan	45	Male	Smoker	79508	N/S	15	N/S	N/S		No	No	Discharged
Fujita (37)	Japan	19	Female	Nil	55613	1583	N/S	1013	252		No	No	Discharged
Gefen (38)	USA	16	Male	Autism, Morbid Obesity	427656	2184	24.9	839	157		No	No	Discharged
Gilpin (39)	USA	16	Male	Asthma	116640	7389	N/S	662	131		No	No	Discharged
He (40)	China	N/S	Male	DM	N/S	N/S	N/S	N/S	N/S		No	No	Discharged
Heidarpour (case 1) (41)	Iran	22	Male	Heroin/ Methadone user	1840	1740	N/S	379	110		Yes	No	Died
Heidarpour (case 2)	Iran	36	Male	Psychosis	5130	1296	N/S	N/S	N/S		No	Yes	Discharged
Heidarpour (case 3)	Iran	47	Female	DM, HTN, hypothyroidism, asthma	16480	5580	N/S	951	874		Yes	No	Died
Hooper (42)	USA	60	Female	Prediabetes, HTN, Dyslipidaemia	N/S	N/S	N/S	N/S	N/S		Yes	Yes	Died
Husain (43)	USA	38	Male	Obesity	33000	398	98.3	58	61		No	No	Discharged
Jahnke (44)	Brazil	69	Female	HTN, Ischaemic Heart Disease, Cardiomyopathy, Alzheimer's Disease	4415	N/S	N/S	N/S	N/S		N/S	No	Discharged
Jin (45)	China	60	Male	DM	17434	280	111	37	37		No	No	Discharged
Johns (46)	USA	33	Male	Obesity	1000000	N/S	17	764	149		Yes	No	Discharged
Khosla (case 1) (47)	USA	65	Male	HTN, Dyslipidaemia	7854	1	N/S	N/S	N/S		Yes	Yes	Died
Khosla (case 2)	USA	78	Male	HTN, DM, Heart Failure	22000	N/S	N/S	N/S	N/S		N/S	Yes	Died
Khosla (case 3)	USA	67	Male	HTN, DM, Dyslipidaemia	6164	N/S	N/S	N/S	N/S		No	No	Discharged
Khosla (case 4)	USA	58	Male	HTN, DM, Dyslipidaemia	4625	N/S	N/S	N/S	N/S		No	No	Discharged

Lead author	Country	Age (years)	Gender	Past medical history	Peak CK (IU/L)	Baseline LDH (U/L)	Baseline CRP (mg/dL)	Baseline AST (U/L)	Baseline ALT (U/L)	Possible or Confirmed Cardiac involvement	Mechanical Ventilation	Haemo-filtration	Outcome
Khosla (case 5)	USA	64	Male	HTN, DM, HIV	3135	N/S	N/S	N/S	N/S		N/S	N/S	Discharged
Legrand (48)	France	39	Male	Nil	17070	N/S	22	556	557	Myopericarditis	No	No	Discharged
Li (49)	UK	22	Female	Asthma	760000	N/S	150	N/S	442		No	Yes	Discharged
Mah (50)	Singapore	32	Male	L5 Radiculopathy	11071	1016	N/S	81	N/S		N/S	N/S	Discharged
Mahmood (51)	USA	89	Female	HTN, hyperlipidemia, T2DM, and stage III chronic kidney disease	40,900	876	22	45	N/S		No	No	Discharged
Meegada (52)	USA	19	Male	Ulcerative Colitis	22000	N/S	N/S	837	162		No	No	Discharged
Mughal (53)	USA	39	Male	Nil	36,064	1024	12.5	n/s	n/s		No	No	Discharged
Mukherjee (54)	USA	49	Male	HTN, DM, Obesity	22740	955	117	470	160		Yes	No	Discharged
Muranova (55)	USA	78	Female	N/S	>90000	N/S	N/S	N/S	N/S		No	No	Discharged
Murillo (56)	Peru	48	Male	Obesity	10768	401	7	65	56	Elevated troponin	N/S	N/S	Discharged
Rivas-Garcia (57)	Spain	78	Male	HTN, DM	22511	972	131.2	High	N/S		N/S	N/S	Discharged
Rosato (58)	Italy	58	Male	HTN, Overweight	3309	N/S	N/S	N/S	N/S		Yes	Yes	Discharged
Samies (59)	USA	16	Male	HTN, DM, Obesity, Sleep Apnoea	426700	N/S	7.17	1316	107		N/S	Yes	Discharged
Shabbir (60)	UK	50	Female	HTN	32230	625	11	N/S	N/S	Myopericarditis	No	No	Discharged
Shanbhag (61)	USA	19	Male	Influenza-associated rhabdomyolysis	694200	2517	0.57	1014	132		No	No	Discharged
Singh (case 1) (62)	USA	67	Male	Nil	19773	459	158	46	30		N/S	No	Died
Singh (case 2)	USA	39	Male	HTN	4330	907	85	131	65		N/S	No	Died
Singh (case 3)	USA	43	Male	End Stage Renal Failure	9793	478	249	142	43		No	Yes	Died
Singh (case 4)	USA	70	Male	Nil	5008	1475	363	179	53		N/S	No	Died
Singh (case 1) (63)	USA	54	Male	Asthma, DM, HTN, obesity	7337	N/S	480	25	28		N/S	Yes	Died
Singh (case 2)	USA	54	Male	Nil	3068	N/S	213	100	48		Yes	No	Discharged
Singh (case 3)	USA	34	Male	Obesity, prediabetes	5454	N/S	129	100	86		Yes	No	Died
Singh (case 4)	USA	71	Male	HTN, Schizophrenia, Seizures	10247	N/S	309	128	120		N/S	Yes	Died
Singh (case 5)	USA	88	Male	HTN, DM	2628	N/S	68	115	60		N/S	No	Died
Singh (case 6)	USA	56	Male	HTN, prediabetes	5388	N/S	96	299	170		Yes	Yes	Discharged
Singh (case 7)	USA	57	Male	Nil	37524	N/S	154	125	44		N/S	No	Died
Singh (case 8)	USA	64	Male	Nil	6435	N/S	247	101	80		N/S	No	Died
Singh (case 9)	USA	36	Male	Nil	5531	N/S	297	154	111		N/S	No	Died
Solis (64)	Mexico	46	Male	Chronic Myeloid Leukaemia	400001	High	High	High	High		N/S	Yes	Died
Su (case 1) (65)	USA	55	Male	HTN, Dyslipidaemia	12391	N/S	N/S	N/S	N/S		Yes	Yes	Discharged
Su (case 2)	USA	59	Male	Chronic Lymphoid Leukaemia, Dyslipidaemia, GORD	4617	N/S	N/S	N/S	N/S		No	No	Still unwell
Suwanwongse (66)	USA	88	Male	HTN, Chronic Kidney Disease, Benign Prostatic Hypertrophy	13581	364	N/S	N/S	N/S		N/S	N/S	Remains in hospital
Tawfeeq (case 1) (67)	UK	52	Female	Obesity	2394	N/S	110	N/S	N/S		Yes	No	Remains in hospital
Tawfeeq (case 2)	UK	62	Male	Obesity	3334	N/S	325	N/S	N/S		Yes	No	Discharged
Taxbro (68)	Sweden	38	Male	DM, Obesity	N/S	N/S	145	N/S	N/S	Elevated troponin	Yes	Yes	Discharged
Tram (69)	Brussels	15	Male	Nil	21876	N/S	28.6	319	42		No	No	Discharged
Uysal (70)	Turkey	60	Male	Nil	4267	575	35	117	52	Elevated troponin	Yes	Yes	Discharged
Valente-Acosta (71)	Mexico	71	Male	Benign Prostatic Hypertrophy	8720	541	2.9	N/S	N/S		Yes	N/S	Discharged
Wongkittichote (72)	USA	23	Female	Long-chain fatty-acyl CoA dehydrogenase deficiency with previous episode of rhabdomyolysis	40600	N/S	N/S	N/S	N/S	Cardiomyopathy	Yes	No	Died
Wu (73)	Taiwan	74	Female	T2DM, HTN	1643	N/S	0.49	N/S	N/S		Yes	No	Extubated - no further comment
Zhang (74)	USA	38	Male	GORD, Sleep apnoea	42670	N/S	364	492	110		No	No	Discharged
Summary		Median Age 50	77% Male	49% had HTN, DM or Obesity	Median CK 15783	Median LDH 751	Median CRP 32	Median AST 186	Median ALT 110	Cardiac muscle involvement in 7%	Mechanical Ventilation 36%	Haemo-dialysis 28%	30% died 62% discharged

DM: diabetes mellitus; HTN: hypertension; GORD: gastro-oesophageal reflux disease; N/S: not specified

Supplementary Table S2. Vaccine associated rhabdomyolysis.

Lead author	Age	Gender	Past medical history	Peak CK (U/L)	Baseline LDH (U/L)	Baseline CRP (mg/dL)	Baseline AST (U/L)	Baseline ALT (U/L)	Cardiac involvement	Mechanical Ventilation	Renal Replacement Therapy	Outcome	Vaccine Manufacturer
Gelbenegger (75)	19	Male	N/S	44180	428	N/S	340	70	N/S	No	No	Recovered	Johnson & Johnson
Hakroush (76)	79	Female	HTN, Degenerative disc disease	14243	N/S	N/S	N/S	N/S	N/S	No	No	Discharged	Pfizer-BioNTech
Faissner (77)	28	Female	Nil	17959	N/S	N/S	N/S	N/S	N/S	No	No	Discharged	Moderna
Ajmera (78)	85	Female	CVA, RA, hyperlipidaemia, asthma	14000	N/S	74	1422	600	Elevated troponin	Yes	Yes	Died	Moderna
Mack (79)	80	Male	DM Type 2	6546	359	147	112	47	N/S	No	No	Discharged	Moderna
Nassar (80)	70	Female	Multiple Sclerosis	53	N/S	7.2	N/S	N/S	Myocarditis	Yes	No	Died	Johnson & Johnson

Supplementary Table S3. Possible IIM cases.

Lead author	Article type	Suggested diagnosis	Age	Gender	PMHx	Symptoms	Peak CK	Muscle biopsy result	Outcome
Gokhale (85)	Case series - case 1 _a	IIM	64	Male	Nil	Dermatomyositis typical rash, cough, fever, dysphagia	990		Discharged
Gokhale	Case series - case 2	IIM - Anti-MDA5 and SAE-1	50	Female	Nil	Muscle weakness, diffuse rash, fever, dyspnoea	150		Died
Sacchi (86)	Case report	Autoimmune myositis - Anti-Ku and Anti-Mi2	77	Female	Obesity, MGUS, COPD, AF, CKD, CHF	Covid-pneumonia and weakness	N/S		Discharged
Zhang (87)	Case report	Autoimmune myositis - Anti-SAE1	58	Female	N/S	Profound proximal weakness including dysphagia, dysarthria, ptosis, facial weakness	700	Perivascular inflammatory infiltration with endomysial extension, upregulated HLA	PEG tube, slow improvement in strength and bulbar function
Rodero (88)	Case series - case 1	JDM	15	Female	Nil	Fatigue, weight loss, polyarthritis, proximal muscle weakness, skin features	545	Consistent with JDM	Remission with IV corticosteroids, immunoglobulins, tofacitinib
Rodero	Case series - case 2	JDM	12	Female	DM	Skin relapse of JDM diagnosed that was in complete remission for last 8 years	N/S	Not done	Remission with IV corticosteroids and immunoglobulins

N/S: not specified; AF: atrial fibrillation; HTN: hypertension; MGUS: monoclonal gammopathy of uncertain significance; COPD: chronic obstructive pulmonary disease; CKD: chronic kidney disease; CHF: congestive heart failure; HLA: human leukocyte antigen.

^aOther cases by Gokhale *et al.* were excluded as they did not test positive for SARS-CoV-2.

Supplementary Table S4. Observational studies describing incidence of rhabdomyolysis in in-patient populations.

First Author	Study Design	Rhabdomyolysis case definition	Total population	Location	Incidence of rhabdomyolysis	Rhabdomyolysis case mortality
Geng (81)	Retrospective cohort	Full text not yet available. Pre-print	1014	Wuhan, China	2.2%	N/S
Haroun (82)	Retrospective cohort	CK>1000, age >18 years, exclude end-stage renal failure and those with secondary causes of rhabdomyolysis	825	New York, USA	17%	47.1%
Guan (83)	Retrospective cohort	N/S	1099	Multicentre, China	0.20%	0%
Mokthari (84)	Retrospective cohort	CK>1000	235 critically ill patients	Boston, USA	48.5%	28.1%