Supplementary

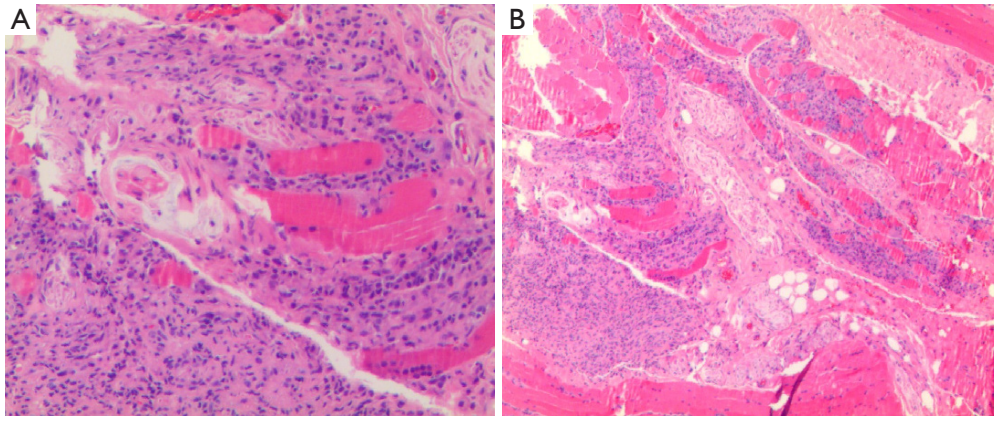

Figure S1 Muscle biopsy with hematoxylin-eosin staining [(A) ×100; (B) ×40]: (trachea and neck muscle) spindle cell proliferation (with a mild shape and no obvious nuclear division) was observed in the skeletal muscle. Combined with the immunohistochemistry results, the possibility of proliferative myositis was considered.

Table S1 Clinical trial of PD-1/PD-L1 inhibitors for Ts and TCs about ICI myocarditis

Author	Number	Type	Drugs	Previous autoimmune disease	CMR or EMB	Grade	Type of other irAE	Time when irAE occurred	Treatment	Outcome (whether deaths due to toxicity)
Giaccone *et al.* (24)	2	TC	Pembrolizumab	No	NA	4	Polymyositis, myositis	2 cycles	Glucocorticoid, pacemaker	No
		TC	Pembrolizumab	No	NA	4	Polymyositis	2 cycles	Glucocorticoid, pacemaker	No
Cho *et al.* (23)	3	T (B2)	Pembrolizumab	Myasthenia	NA	4	Myasthenia	1 cycle	Glucocorticoid, immunoglobulin	No
		T (B2)	Pembrolizumab	No	NA	4	Autoimmune hepatitis, thyroiditis	2 cycles	Glucocorticoid, immunoglobulin	No
		T (B2/B3)	Pembrolizumab	No	NA	4	No	2 cycles	Glucocorticoid, immunoglobulin	No

PD-1, programmed death-1; PD-L1, programmed cell death ligand 1; T, thymoma; TC, thymic carcinoma; ICI, immune checkpoint inhibitor; CMR, cardiovascular magnetic resonance; EMB, endomyocardial biopsy; irAE, immune-related adverse event; NA, not available.

Table S2 Nonrandomized clinical trial of PD-1/PD-L1 inhibitors for Ts and TCs about ICI myocarditis

Author	Number	Gender	Age (years)	Type	Drugs	Previous autoimmune disease	CMR or EMB	Grade	Type of other irAE	Time when irAE occurred	Treatment	Outcome (whether deaths due to toxicity)
Hyun *et al.* (39)	1	F	45	T (B2)	Pembrolizumab	Chronic hepatitis B	No	4	Oscular MG, hepatic dysfunction	1 cycle	Glucocorticoid pulse therapy	Yes
Chen *et al.* (40)	1	M	43	T (B3)	Nivolumab	No	CMR	4	N0	1 cycle	Glucocorticoid, pacemaker, IVIG	Yes
Konstantina *et al.* (41)	2	F	58	T (B2/B3)	Pembrolizumab	Ocular myasthenia gravis	No	4	Stevens Johnson hepatis dysfunction	1 cycle	Mycophenolate mofetil	Yes
		F	30	T (B3)	Pembrolizumab	No	No	4	Myositis	1 cycle	Glucocorticoid, IVIG, rituximab	Yes

PD-1, programmed death-1; PD-L1, programmed cell death ligand 1; T, thymoma; TC, thymic carcinoma; ICI, immune checkpoint inhibitor; CMR, cardiovascular magnetic resonance; EMB, endomyocardial biopsy; irAE, immune-related adverse event; F, female; MG, myasthenia gravis; M, male; IVIG, intravenous immunoglobulin.

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Table S3 Clinical trial of PD-1/PD-L1 inhibitors for Ts about curative effect evaluation

Author	Number	Drugs	Previous autoimmune disease	Curative effect evaluation	Whether irAE occurs	Outcome (whether deaths due to toxicity)
Rajan *et al.* (25)	7	Avelumab	No	cPR	Yes	No
		Avelumab	No	SD	Yes	No
		Avelumab	No	uPR	Yes	No
		Avelumab	No	PR	Yes	No
		Avelumab	No	cPR	Yes	No
		Avelumab	No	SD	No	–
		Avelumab	No	PD	No	–
Cho *et al.* (23)	7	Avelumab	Myasthenia	PR	Yes	Yes
		Avelumab	Myasthenia	PR	Yes	No
		Avelumab	No	SD	Yes	No
		Avelumab	No	SD	Yes	No
		Avelumab	No	SD	Yes	No
		Avelumab	No	SD	No	–
		Avelumab	No	SD	No	–

PD-1, programmed death-1; PD-L1, programmed cell death ligand 1; T, thymoma; irAE, immune-related adverse event; cPR, confirmed PR; PR, partial response; SD, stable disease; uPR, unconfirmed PR; PD, progressive disease.

Table S4 Nonrandomized clinical trial of PD-1/PD-L1 inhibitors for Ts about curative effect evaluation

Author	Number	Age (years)	Drugs	Previous autoimmune disease	Curative effect evaluation	Whether irAE occurs	Outcome (whether deaths due to toxicity)
Zander *et al.* (36)	1	49	Pembrolizumab	No	PR	Yes	No
Ak *et al.* (31)	2	52	Nivolumab	No	PR	No	–
		43	Nivolumab	No	SD	No	–
Argentiero *et al.* (37)	1	42	Pembrolizumab	No	PR	Yes	Yes
Shen *et al.* (38)	1	53	Pembrolizumab	No	PR	No	–

PD-1, programmed death-1; PD-L1, programmed cell death ligand 1; T, thymoma; irAE, immune-related adverse event; PR, partial response; SD, stable disease.

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Table S5 Clinical trials of PD-1/PD-L1 inhibitors for TCs about curative effect evaluation

Author	N	Drugs	Previous autoimmune disease	Curative effect evaluation	Whether irAE occurs	Outcome (whether deaths due to toxicity)
Mizugaki *et al.* (35)	1	Atezdizumab	No	SD	Yes	No
Rajan *et al.* (25)	1	Avelumab	No	SD	No	–
Katsuya *et al.* (26)	15	Nivolumab	No	SD/PD: 11/4	Yes	No
Giaccone *et al.* (24)	40	Pembrolizumab	No	CR/PR/SD/PD: 1/8/21/10	Yes	No
Cho *et al.* (23)	26	Pembrolizumab	No	PR/SD/PD: 5/14/7	Yes	No

PD-1, programmed death-1; PD-L1, programmed cell death ligand 1; TC, thymic carcinoma; irAE, immune-related adverse event; SD, stable disease; PD, progressive disease; CR, complete response; PR, partial response.

Table S6 Nonrandomized clinical trial of PD-1/PD-L1 inhibitors for TCs about curative effect evaluation

Author	Number	Drugs	Previous autoimmune disease	Curative effect evaluation	Whether irAE occurs	Outcome (whether deaths due to toxicity)
Yang *et al.* (30)	1	Nivolumab	No	PR	Yes	No
Ak *et al.* (31)	4	Nivolumab	No	SD	No	–
		Nivolumab	Myasthenia gravis	PR	Yes	No
		Nivolumab	No	PR	Yes	No
		Nivolumab	No	PR	No	–
Wong-Chong *et al.* (32)	1	Pembrolizumab	No	PD	No	–
Cafaro *et al.* (33)	1	Pembrolizumab	No	SD	No	–
Uchida *et al.* (34)	4	Nivolumab	No	PR	No	–
		Nivolumab	No	PR	No	–
		Nivolumab	No	PR	No	–
		Nivolumab	No	SD	Yes	No

PD-1, programmed death-1; PD-L1, programmed cell death ligand 1; TC, thymic carcinoma; irAE, immune-related adverse event; PR, partial response; SD, stable disease; PD, progressive disease.

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