

Supplemental material													
Supplemental Table 1 Previously reported cases of cardiac dysfunction directly or partly caused by hypothyroidism in children													
Ref.	Sex	Gestational Age	Birth Weight	Age of onset	TSH	Other indicators	Cardiac dysfunction	Initial Treatment	Symptom improvement time after treatment	Outcome			
Williams et al[13], 1984	M	NE	NE	14 years	40 mIU/L (0–8)	T4 20 nmol/L (70–170); T3 0.2 nmol/L (1–2.5)	Massive pericardial effusion	L-T4 (p.o.) 25 µg/day	After 9 months	The heart size returned to normal.			
Altman et al[32],1985	F	NE	NE	5 years	44.8 mIU/L (1.5–8)	T3 uptake 22% (30–40); TT4 19 nmol/L (60–150); FT4 index 0.2 (5–12)	Disproportionately thickened septum	L-T4 (p.o.) 50 µg/day	After 6 months	The septal to posterior wall ratio had fallen to normal.			
Drop et al[27],1989	F	full term	2450 g	6 weeks	Increased	T4<12 nmol/L; T3 resin uptake 129%	Cardiogenic shock	T3 (p.o.) 1 µg t.i.d, adding T4 (p.o.) 15 µg/day after 1 week	After 3 weeks	Discharged.			
Pokrajac et al[29],1989	M	NE	NE	5 months	NE	NE	Pericarditis and heart failure	NE	NE	NE			
Olguntürk et al[23],1998	M	NE	NE	1.5 years	NE	NE	Dilated cardiomyopathy and atrioventricular complete heart block	NE	NE	NE			
Sanda et al[14],2007	F	NE	NE	12 years	673 mIU/L (0.35–0.5)	FT4 <2.58 pmol/L (10.3–25.7); TPOAb 1:102400	Large pericardial effusion	L-T4 (p.o.) 75 µg/day	NE	Discharged.			
Sanctis et al[15],2008	M	NE	NE	7 years	Increased	FT4 decreased	Cardiac dysfunction and pericardial effusion	L-T4 (NE) 25 µg/day	After 3 months	Pericardial effusion disappeared.			
Fusco et al[25],2010	M	34 weeks	1920 g	30 days	15.35 µUI/mL (0.35–8)	FT4 9 pmol/L (10.9–20.0); FT3 4.3 pmol/L (3.5–6.5)	Hypertrabecular aspect of LV myocardium, long QT intervals	L-T4 (p.o.) 10 µg/kg/day	After 50 days	The LV trabecular aspect disappeared, and QTc decreased to a normal value.			

Jain et al[30],2011	M	full term	NE	10 years	0.64 mIU/L (0.6–6.3)	T4 11.4 nmol/L (82.4–171); T3 0.75 nmol/L (1.44–3.70)	Congestive heart failure due to dilated cardiomyopathy	L-T4 (p.o.) 50 µg/day	After 4 weeks	Respiratory distress improved gradually. Discharged.
Anah et al[16],2011	F	NE	NE	16 years	>40 mIU/L (0.5–5.1)	T4< 6.44 nmol/L (51.5–154.4)	Massive pericardial effusion	L-T4 (p.o.) 50 µg twice daily	After 3 months	Improvements in symptoms and normal echocardiogram were observed.
Zaki et al[28],2012	F	NE	NE	5 months	221.67 mIU/mL (0.8–8.2)	T3< 0.154 nmol/L (1.61–3.76); T4 15.44 nmol/L (100.4–212.4)	Refractory cardiogenic shock	L-T4 (p.o.) 10 µg/kg/day	After 48 h	HR and BP were normal after 48 h. LV function was normal after 1 month.
Leonardi et al[17],2017	M	NE	NE	4 years	487 mIU/L (0.340–5.600)	FT4 0.51 pmol/L (6.95–15.96) TPOAb >1500 UI/L (0.0–9.0)	Significant pericardial effusion and sinus bradycardia	L-T4 (p.o.) 1.78 µg/kg/day	After 1 month	The effusion was completely regressed.
Thompson et al[20],2017	M	NE	NE	7 years and 11 months	0.501 mIU/L (0.6–4.5)	FT4 <6.44 pmol/L (9.01–27.03)	Bradycardia and first-degree AVB	L-T4 (IV) 10 µg/kg/day	Within 48 h	His activity returned to baseline.
Mangaraj[18],2018	F	NE	NE	15 years and 3 months	>100 mIU/mL (0.35–4.2)	FT3 1.72 pmol/L (3.10–6.80); FT4 3.01 pmol/L (12–22); TPOAb 560 IU/mL (0–35)	Pulsus paradoxus and massive pericardial effusion	L-T4 (p.o.)	NE	Significant improvement in clinical status.
Nakanomori et al[21],2019	M	35+4 weeks	NE	8 days	903.3 mIU/L	FT3 1.61 pmol/L; FT4 3.35 pmol/L; Tg 85.9 ug/L	Sinus bradycardia	L-T4 (p.o.) 10 µg/kg/day	After 19 days	HR was increased to normal. Discharged.

Janson et al[22],2019	F	NE	NE	12 years	346 mIU/L (0.4-4.7)	FT4 1.4 pmol/L (12-23); FT3 1.4 pmol/L (3.0-6.5) TPOAb 106 kE/L (< 34)	Near-cardiac arrest, bradycardia, hypotension, and cardiogenic shock	L-T4 (p.o.) 0.29 µg/kg/day	After 29 days	Discharged.
Zhang et al[24],2021	M	NE	NE	6 years	>150 mIU/L	FT4 1.50 pmol/L	Third-degree AVB and cardiogenic shock	L-T4 (p.o.) 50 µg/day	After 1 day	AVB disappeared, and LV contractility was normal.
Mansueto et al[19],2022	F	NE	NE	14 years	277.75 mIU/L (0.35-4.5)	FT3 0.31 pmol/L (3.53-6.45); FT4 2.83 pmol/L (10.30-23.17)	Bradycardia, hypotension, pericardial effusion	L-T4 (p.o.) 25 µg/day	After 5 days	Pericardial effusion, BP, and HR improved.
Choi et al[31],2023	M	NE	NE	16 years	98 mIU/L (0.17-4.85)	FT4 0.77 pmol/L (10.3-24.5); T3 0.74 nmol/L (1.20-2.80); TPOAb 704 U/ml (0-60); TRAb >400 IU/L (positive>1.5)	Dilated cardiomyopathy and congestive heart failure	T4 (p.o.) 150 µg/day and T3 (p.o.) 12.5 µg/day	After 6 weeks	Heart function noticeably recovered.
Kerbage et al[33],2023	F	NE	NE	18 years	95.218 IU/mL (0.4-4)	FT4< 6.44 pmol/L (9.01-27.03)	Pulseless electrical activity and perioperative cardiac arrest	T4 (p.o.)	After 5 days	Discharged.
Chimatapu et al[26],2024	F	NE	NE	15 years	387.400 mIU/L (0.463-3.980)	FT4 1.67 pmol/L (10.04-17.12); FT3 < 0.76 pmol/L (4.47-6.96)	Refractory torsades de pointes	L-T4 (IV) 100 µg/day and L-T3 25 µg twice daily	NE	QTc improved to 395 ms.

M: Male; F: Female; NE: No mention; TSH: Thyroid-stimulating hormone; T4: Thyroxine; FT4: Free T4; TT4: Total Thyroxine; TPOAb: Thyroid peroxidase antibody; Tg: Thyroglobulin; T3: Triiodothyronine; FT3: Free T3; TRAb: TSH receptor antibody; LV: Left ventricular; AVB: Atrioventricular block; L-T4: Levothyroxine; L-T3: Liothyronine; p.o.: per os; IV: Intravenous; HR: Heart rate; BP: Blood pressure.