Table 1: The genetic basis for long QT syndromes.

LQTS subtype	*Relative percentage in LQTS*	*Gene*	*Chromosomal locus*	*Protein*	*Protein function*	*Ionic current affected*
LQT1	30-35%	*KCNQ1*	11p15.5	K v 7.1	α-subunit of I_{Ks} channel	I_{Ks} ↓
LQT2	20-30%	*KCNH2*	7q35-36	K v 11.1	α-subunit of I_{Kr} channel	I_{Kr} ↓
LQT3	5-10%	*SCN5A*	3p21-p24	NaV 1.5	α-subunit of Na^+ channel	$I_{Na,L}$↑
LQT4	rare	*ANKB*	4q25-q27	Ankyrin B	Anchoring and adaptor protein	>1 currents affected
LQT5	rare	*KCNE1*	21q22.1-q22.2	minK	β-subunit of I_{Ks} channel	I_{Ks} ↓
LQT6	rare	*KCNE2*	21q22.1-q22.2	MiRP1	β-subunit of I_{Kr} channel	I_{Kr} ↓
LQT7	rare	*KCNJ2*	17q23	Kir2.1	α-subunit of I_{K1} channel	I_{K1} ↓
LQT8	rare	*CACNA1C*	12p13	CaV 1.2	α-subunit of Ca^{2+}	$I_{Ca,L}$↑

					channel	
LQT9	rare	*CAV3*	3p25	Caveolin-3	Colocalize with NaV 1.5 at sarcolemma	$I_{Na,L}\uparrow$
LQT10	rare	*SCN4B*	11q23.3	Na^+ channel β-4 subunit	β-subunit of Na^+ channel	$I_{Na,L}\uparrow$
LQT11	rare	*AKAP9*	7q21-q22	Yotiao	Mediate I_{Ks} channel phosphorylation	$I_{Ks}\downarrow$
LQT12	rare	*SNTA1*	20q11.2	α1-syntrophin	Regulate Na^+ channel function	$I_{Na,L}\uparrow$
LQT13	rare	*KCNJ5*	11q23.3-24.3	Kir3.4	Inward rectifier K^+ channel activated by G protein	$I_{KAch}\downarrow$

ICaL, L-type calcium current ; IK_1, inward rectifier potassium channel; I_{KAch}, acetylcholine-activated potassium channel; I_{Kr}, rapidly activating delayed rectifier potassium channel; I_{Ks}, slowly activating delayed rectifier potassium channel; INaL, late sodium current ; LQT, long QT syndrome subtype; LQTS, long QT syndrome.