Supplementary Table 1: Baseline clinical characteristics and circumstances of death in individuals with iMVP from our previously reported indexing of the Australian National Coronial Information System database between 2000 and 2018.

Clinical Characteristics (n=71)			
Age range	16-87	***Medications***	38
Female Sex	36 (51)	Cardiac	11 (29)
Medical History	58	Aspirin	2
Cardiac	25 (43)	Warfarin	1
Obesity	12	Beta-blocker‡‡	3
Hypertension	9	Digoxin	2
Dyslipidemia	9	Anti-hypertensive§§	7
Endocarditis (healed)	1	Lipid lowering	5
Atrial fibrillation	2	Other||||	14 (37)
Possible long QT syndrome*	1	No medications	16 (42)
PVC ablation†	1	***Activity at time of death***	66
Pericarditis	1	Normal daily activity##	21 (32)
Marfanoid‡	1	Sitting / resting	15 (23)
Symptoms§	6	Sleeping	12 (18)
Other	21 (36)	Exertion (or soon after)	9 (14)
Chronic respiratory disease||	4	Using toilet	6 (9)
Cancer#	4	Physical pain	2 (3)
Psychiatric**	8	Emotional stress	1 (2)
Alcoholism	1	***Approximate time of death***	53
Endocrine††	2	0600-1400	20 (38)
GERD	1	1400-2200	17 (32)
No other medical history	14 (24)	2200-0600	16 (30)

Data from: Han et al. 2020, Characteristic Histopathological Findings and Cardiac Arrest Rhythm in Isolated Mitral Valve Prolapse and Sudden Cardiac Death. J Am Heart Assoc, 2020. 9(7): p. e015587.

Values are expressed as number or number (percentage), unless otherwise indicated.

GERD indicates gastroesophageal reflux disease; iMVP, isolated mitral valve prolapse; and PVC, premature ventricular complex.

*ECG unavailable.

†For left ventricular origin, PVC possibly related to MVP.

‡Normal aorta at autopsy.

§Includes syncope (2), palpitations (3) and dizziness (1).

||Includes asthma (2), chronic obstructive pulmonary disease (1) and obstructive sleep apnoea (1).

#Includes non-metastatic prostate cancer (3) and previously undiagnosed non-Hodgkin's lymphoma (1).

**Includes depression alone (2), anxiety alone (1), depression and anxiety (3), and schizophrenia (2).

††Includes hypothyroidism (1) and hypopituitarism (1).

‡‡Includes 1 patient taking sotalol.

§§Includes 2 patients taking loop diuretics.

||||Includes inhaled bronchodilators (5), non-steroidal anti-inflammatory drugs (1), thyroxine (1), prednisolone (1), benzodiazepines (3), anti-depressants (5), olanzapine (1), antacid (3) and sulfasalazine (1).

##Includes cases where individuals were found at home, at work performing routine (non-exertional) tasks or walking

Source: Han et al. 2020.[1]

Supplementary Table 2: Baseline characteristics in cases of MVP and SCD or Cardiac Arrest in our previously reported 2018 systematic review.

Baseline Characteristics	All cases (n=161)	iMVP (n=123)	non-iMVP (n=38)
Age (years)			
Range	6-79	6-79	8-76
Mean ± SD	37 ± 16	36 ± 16	40 ± 17
Median (IQR)	32 (25-51)	30 (25-47)	36 (26-56)
Female gender	109 (68%)	85 (69)	24 (63)
Sudden cardiac death	100 (62%)	75 (61)	25 (66)
Circumstances of death of cardiac arrest	n=98	n=74	n=24
Sleeping	6 (6)	5 (7)	1 (4)
Normal daily activity*	45 (46)	34 (46)	11 (46)
Exertion or soon after†	22 (22)	17 (23)	5 (21)
Emotional stress	6 (6)	4 (5)	2 (8)
Driving	4 (4)	4 (5)	0
Anaesthesia related‡	6 (6)	5 (7)	1 (4)
Pregnancy related§	4 (4)	3 (4)	1 (4)
Witnessed in hospital	5 (5)	2 (3)	3 (13)
Prior symptoms||	n=71	n=48	n=23
Dizziness	14 (20)	11 (23)	3 (13)
Syncope	25 (35)	14 (29)	11 (48)
Dyspnoea	9 (13)	5 (10)	4 (17)
Chest pain	20 (28)	15 (31)	5 (22)
Palpitations	39 (55)	28 (58)	11 (48)
Fatigue	6 (8)	4 (8)	2 (9)
None	12 (17)	10 (21)	2 (9)
Previous cardiac arrest	n=20	n=14	n=6
Yes#	8 (40)	3 (21)	5 (83)
No	12 (60)	11 (79)	1 (17)
Medication use	n=57	n=32	n=25
Digoxin	7 (13)	1 (3)	6 (24)
Beta-blocker**	16 (28)	7 (22)	9 (36)
Class 1††	10 (18)	0	10 (40)

Amiodarone	1 (2)	0	1 (4)
Other medications‡‡	15 (26)	9 (28)	6 (24)
Nil	17 (30)	16 (50)	1 (4)
Family history of SCD	n=28	n=22	n=6
Yes	4 (14)	3 (14)	1 (17)
No	24 (86)	19 (86)	5 (83)

Data from: Han et al. 2018, Mitral Valve Prolapse and Sudden Cardiac Death: A Systematic Review. J Am Heart Assoc, 2018. 7(23): p. e010584.

Values are expressed as number or number (percentage), unless otherwise indicated.

iMVP indicates isolated mitral valve prolapse; MVP, mitral valve prolapse; IQR, interquartile range and SCD, sudden cardiac death.

*Includes death at home, work (non-physical), or during commute

†1 case was post sexual intercourse

‡4 cases during induction, 1 case during anaesthesia reversal, 1 case during peripheral arterial puncture

§2 cases were pregnant, 1 case during epidural injection, 1 case was 2 days post-partum with likely tachycardia mediated cardiomyopathy due to permanent junctional reciprocating tachycardia

||Multiple symptoms or changes in some cases

#3 cases with documented ventricular fibrillation

**2 patients taking sotalol

††Includes propafenone, procainamide, mexilitine, quinidine, disopyramide and flecainide

‡‡Includes amoxicillin, diuretics, anti-epileptics, primidone, methyldopa, perindopril, trastuzumab, inhaled glucocorticosteroids, danazol, domperidone and various psychotropic agents in 3 cases

References

1. Han HC, Parsons SA, Teh AW, et al. Characteristic Histopathological Findings and Cardiac Arrest Rhythm in Isolated Mitral Valve Prolapse and Sudden Cardiac Death. Journal of the American Heart Association. 2020;9(7):e015587. [10.1161/jaha.119.015587]. [PMC7428599].

2. Han HC, Ha FJ, Teh AW, et al. Mitral Valve Prolapse and Sudden Cardiac Death: A Systematic Review. Journal of the American Heart Association. 2018;7(23):e010584. [10.1161/jaha.118.010584]. [PMC6405538].