

Perceptions of treatment predict Quality of Life in patients with Implantable Cardioverter defibrillators

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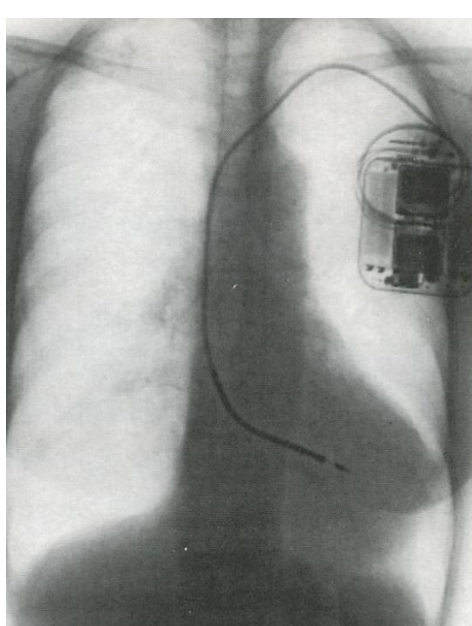
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Introduction

Implantable cardioverter defibrillators (ICDs)

- For the prevention of sudden cardiac death in patients with life-threatening ventricular arrhythmias
- Deliver electrical shocks when arrhythmic event was caused



We also refer to CRT-D (Cardiac Resynchronization Therapy – Defibrillator, pacing machine with defibrillator functioning) recipients as ICD recipients, because they can experience electrical shocks

Positive side of ICD treatment

- Improve the rate of survival
- Assist patients' cardiac motion e.t.c.

Negative side of ICD treatment

- Cause severe pain when ICD deliver electrical shock
- Be at risk of being infected e.t.c.

→However, some patients perceive “living with ICD” as positive, other patients perceive it as negative. (Burns et al., 2005; Frizelle et al., 2006)

Objective

To identify the impact of perceptions about ICD treatment on QOL in Japanese ICD recipients

Methods

Participants

221 ICD recipients at Tokyo Women Medical University Hospital between May. 2010 to Mar. 2011. (Cross-sectional study)

Measures

- **Perceptions of ICD treatment:** Perceptions of Implantable cardioverter defibrillators scale (PIS)

(1) Worried about electrical shock
(2) Concerned about limitation of activity or role
(3) Felt released from fear about heart attack or death
(4) Felt it easy to do some activity

※submitted in Japanese Journal

- **QOL:** MOS 36-item Short Form Health Survey (SF-36)
Subscale PCS(Physical Component Summary) / MCS(Mental Component Summary)
- **Patients' Health record:** gender, age, family, device, history of ischemic cardiac disease, history of electrical shock, and implanted period

Statistic analysis

Hierarchical multiple linear regression analysis were done to rule out the possibility that group differences in out come were due to confounders. Independent variables were chosen based on their hypothetical potential to influence and mediate the relationship between perceptions of ICD treatments and QOL.

Results

Table1. Patient demographics and clinical characteristics

	n/M	(%)/±SD
Gender		
Male	85	(73.9)
Female	30	(26.1)
Age (years old)	60.8	± 14.1
Family		
Living with their family	93	(80.9)
Living alone	22	(19.1)
Background heart disease		
Ischemic cardiac disease	30	(26.1)
Myocardial disease	59	(51.3)
Heart failure	43	(37.4)
Device		
ICD	78	(67.2)
CRT-D	38	(32.8)
History of ICD electrical shock		
No	75	(65.2)
Yes	40	(34.8)
Implanted period (years)	10.9	± 5.29

MCS(Mental-side of QOL) is predicted by both **negative perceptions** (Worried about electrical shock or error) and **positive perceptions** (Felt easy to do some activity) about ICD treatment.

Table2. Relationships between **PCS** and Perceptions of ICD treatment

Characteristics		standardized <i>β</i>	95% CI		<i>p</i>
			lower	upper	
STEP 1 $\Delta R^2 = .01$					
Gender		.04	-3.02	4.74	.66
Family		.10	-1.93	6.70	.28
History of ICD electrical shock		.00	-3.56	3.61	.99
STEP 2 $\Delta R^2 = .06$					
Gender		.05	-3.03	4.90	.64
Family		.11	-1.89	6.92	.26
History of ICD electrical shock		.01	-3.54	3.84	.94
Worried about electrical shock or error		.21	-.05	.85	.08
Concerned about limitation of activity or role		-.20	-1.51	.07	.07
Felt released from fear about heart attack or death		-.16	-.99	.19	.18
Felt it easy to do some activity		.01	-.81	.92	.99

Table3. Relationships between **MCS** and Perceptions of ICD treatment

Characteristics		standardized β	95% CI		p
			lower	upper	
STEP 1 $\Delta R^2 = .03$					
Gender		-.17	-6.01	.27	.07
Family		-.01	-3.74	3.25	.89
History of ICD electrical shock		-.09	-4.24	1.57	.37
STEP 2 $\Delta R^2 = .13$					
Gender		-.13	-5.33	.94	.17
Family		-.05	-4.40	2.57	.60
History of ICD electrical shock		-.05	-3.66	2.18	.62
Worried about electrical shock or error		-.26	-.77	-.06	.02
Concerned about limitation of activity or role		.16	-.15	1.10	.14
Felt released from fear about heart attack or death		.17	-.10	.83	.13
Felt it easy to do some activity		-.26	-1.52	-.15	.02

Discussion

- In previous study, negative perceptions associated with patients' poor QOL. (Burns et al., 2005)
- Our results indicated that positive perceptions also may decrease patients' QOL (especially in mental function)

Overconscious about having ICDs in their body may trigger poor QOL of patients with ICD.
→We have to develop alternative psychological care in a new way such as attention.