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REIMPLANTE EN UNO vs EN DOS TIEMPOS EN ENDOCARDITIS INFECCIOSA ASOCIADAS A DISPOSITIVOS DE ESTIMULACIÓN CARDÍACA (EIDEC)

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Grupo Andaluz de Manejo de la Endocarditis Infecciosa

Introducción

- ✓ El manejo terapéutico de las EIDEC incluye la retirada del dispositivo.
- ✓ No obstante, existen incertidumbres en cuando llevar a cabo el reimplante del nuevo dispositivo por el posible riesgo de reinfección.

An episode of ICED infection should prompt a review of the need for a replacement device; in many instances the initial indication was equivocal and does not justify the risk of re-implantation. Robust evidence to support this recommendation is lacking but it is well recognized that sepsis is a contraindication to permanent device implantation.[124] In case series, 70%–77% of patients required a new device after removal of an infected ICED, indicating that this is a common dilemma.[14,71] Re-implantation was usually undertaken when systemic symptoms had resolved. Fever at the time of device implantation is a described risk factor for subsequent device infection,[35] so ideally patients should be apyrexial and without other symptoms or signs of systemic infection at the time of implantation. The optimal reported time to re-implantation after removal of the infected device is not known but some advocate an interval of 7–10 days.[14,19] If symptoms and signs have resolved at the time of device removal, earlier reimplantation may be appropriate—further research is needed.

Guidelines for the diagnosis, prevention and management of implantable cardiac electronic device infection. Sandoe et al. J Antimicrob Chemother 2015 Feb;70(2):325-59.

Reimplantation of a new device. All patients were assessed for ongoing need of a cardiac device after extraction of an infected system. Reimplantation of a new device was considered necessary in only 127 (67%) of the cases. Median time from explantation to reimplantation was significantly longer for patients with BSI compared with nonbacteremic cases (13 days vs. 7 days, $p < 0.0001$). A new system was placed as early as 3 days in cases of negative blood cultures (Fig. 2). The median time from explantation to reimplantation in patients with CoNS was 7 days compared with a delay of 12 days in cases of *S. aureus* infection ($p = 0.09$). In cases in which a new device system was implanted, most patients (94%) had transvenous lead insertion with implantation of a generator on the opposite side of the infected pocket. Epicardial electrodes were placed in 7 (5%) patients.

Management of Cardiac Device Infections Sohail et al.
JACC 2007; 49 (18): 1851-1859

Original Article

Reimplantation and Repeat Infection After Cardiac-Implantable Electronic Device Infections

Experience From the MEDIC (Multicenter Electrophysiologic Device Infection Cohort) Database

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Circ Arrhythm Electrophysiol. 2017;10:e004822.

Timing of Reimplantation

n=381 -> retirada del dispositivo

The timing of reimplantation procedures varied considerably across the study population. A graphical representation can be found in Figure 3. The median time was 10 days, with an IQR of 6 to 19 days. Twenty-three patients were reimplanted on the same day that their original devices were removed, and 1 patient was reimplanted 160 days later. In all, 82 (37.3%) patients were reimplanted in the first week, 68 (30.9%) in the second week, 28 (12.7%) in the third week, and 42 (19.1%) after 3 weeks or more.

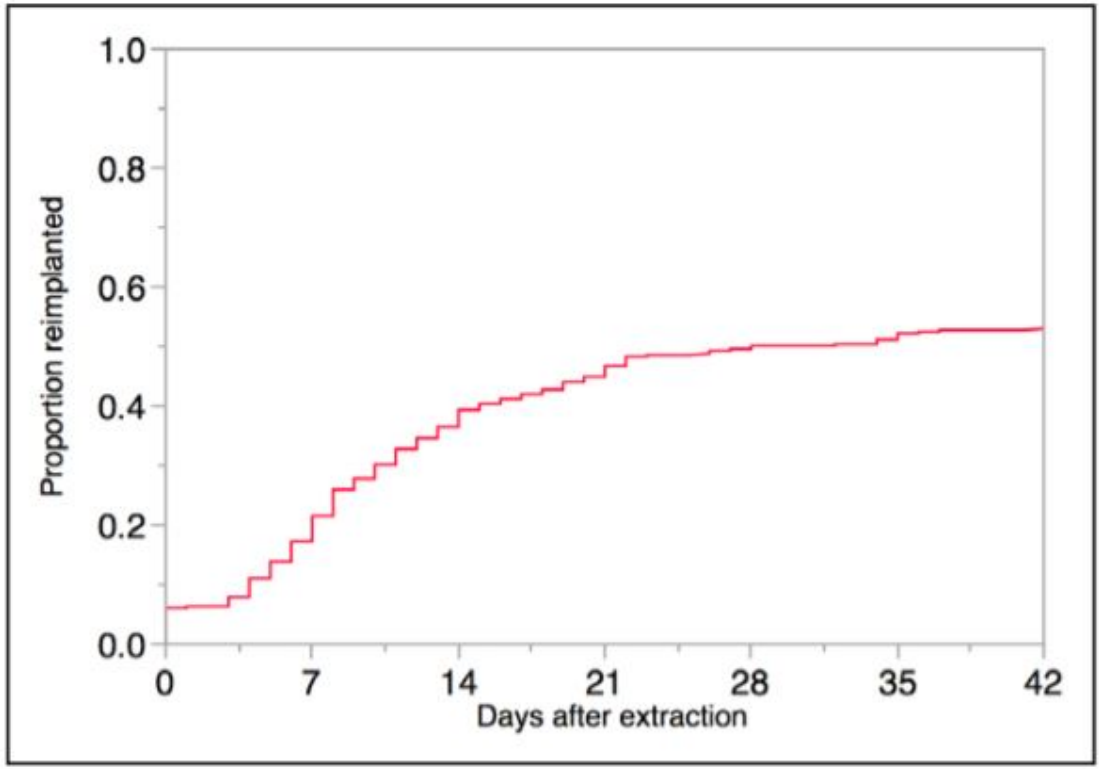

Figure 3. The proportion of patients treated with device removal who were reimplanted over time.

De: Circ Arrhythm Electrophysiol. 2017;10:e004822.

One Stage Side-to-Side Replacement of Infected Pulse Generators and Leads

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Infected and contaminated cardiac pulse generators and leads must be removed entirely in order to effect a cure. We have shown through our experience with 68 consecutive cases that explantation of the offending system and replacement of a new device on the opposite side can be safely accomplished in one sitting—a side-to-side replacement—as long as there is appropriate case selection. There were no early or late infections of the new operative site. (PACE 2006; 29:393–396)

pacemaker, reoperation, infection

Methods

We conducted a retrospective analysis of 68 consecutive implantable pacemaker or defibrillator (ICD) infections treated by one of us (VP) by an SSR procedure between June 1990 and April 2004.

SSR: side to side replacement

PACE 2006; 29:393-396.

Objetivos

1) Describir las características de una cohorte de pacientes con EIDEC que se someten a extracción y reimplante del dispositivo en uno o dos tiempos.

2) Analizar la relación entre el tiempo de reimplante y el desenlace clínico.

Material y Métodos

- Estudio multicéntrico observacional prospectivo en 8 hospitales de nivel terciario desde enero de 2008 hasta diciembre 2015.

- **Criterios de inclusión:** pacientes con endocarditis definida y posible según los criterios modificados de Duke con afectación del electrocatéter y/o endocardio demostrado mediante ecocardiografía y/o cirugía.

- Diferenciamos dos grupos en función del momento del reimplante del dispositivo: **en un tiempo** y **en dos tiempos**.

Resultados

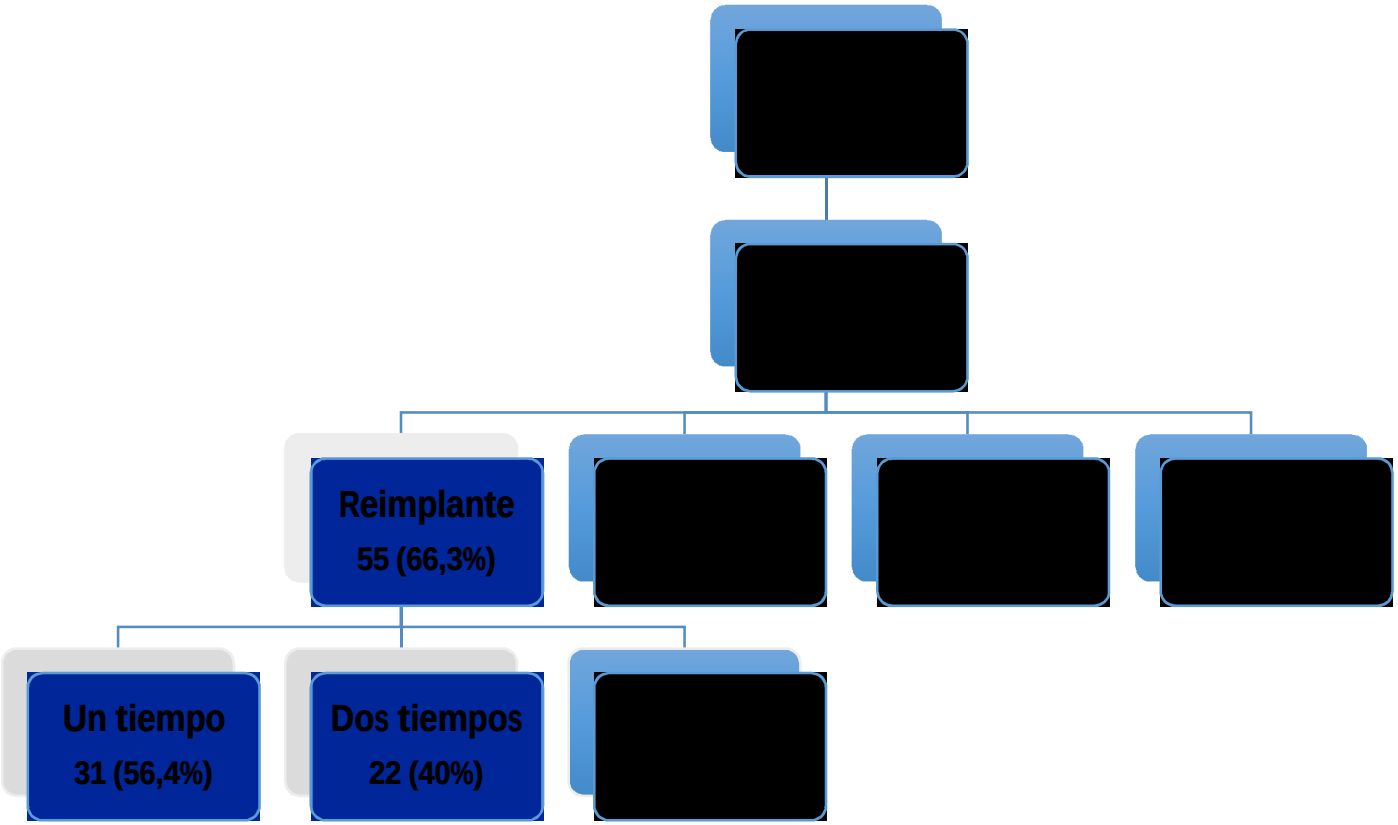

Figura 1. Diagrama de distribución de casos de la cohorte analizada.

Figura 2. Distribución de casos según tipo de reimplante por hospitales

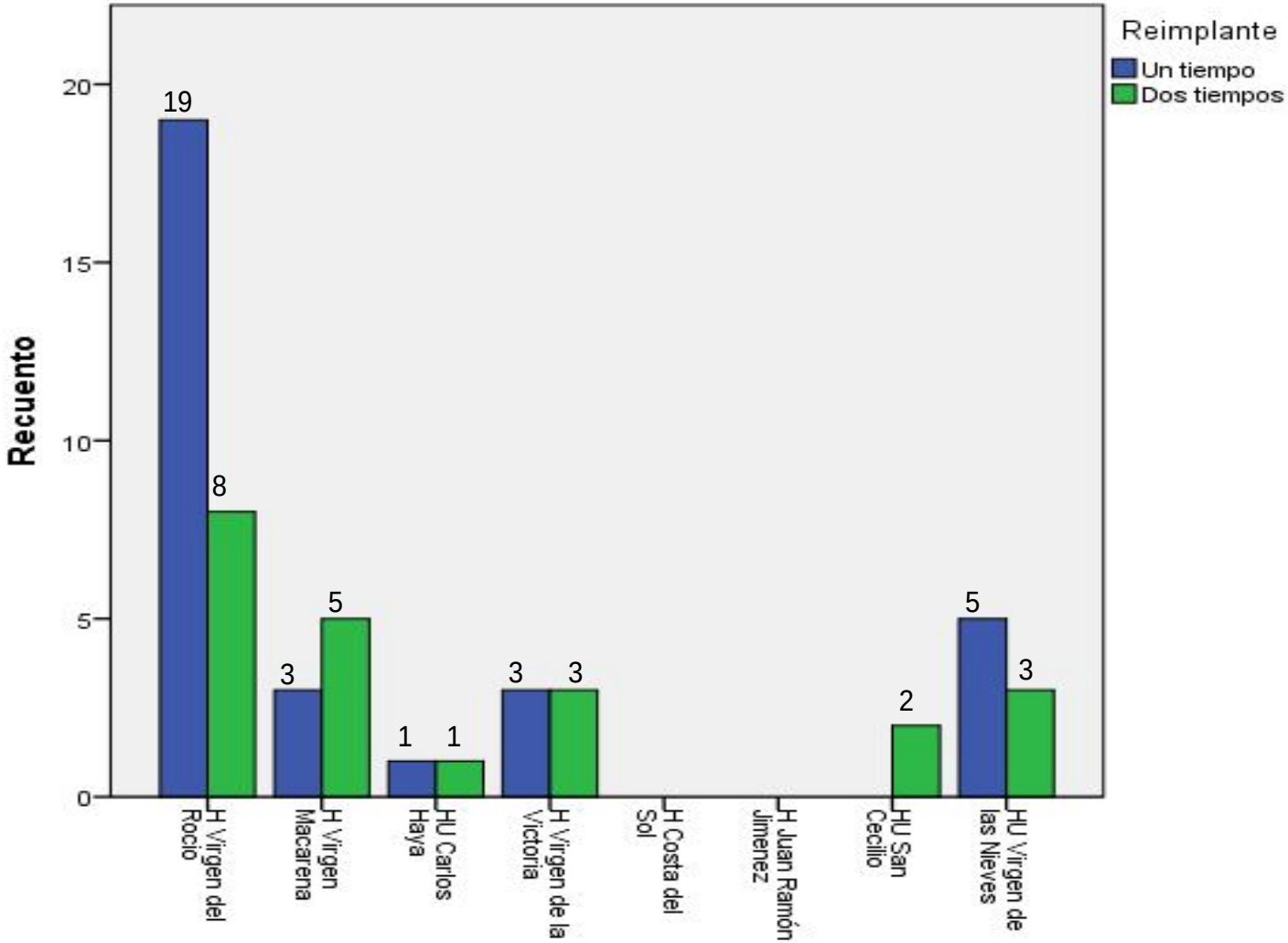

Tabla 1. Características basales de las cohortes con reimplante en uno y dos tiempos.

Variable	Un tiempo (n=31)	Dos tiempos (n=22)	p
Edad, mediana (rango), años	68 (57-76)	65 (55-72,5)	0,39
Charlson, mediana (rango), años	3,8 (1-5)	2,5 (1,45-4,2)	0,34
Infección precoz (<6m) , n (%)	3 (9,7)	3 (14,3)	0,67
Tipo de dispositivo; **MP, n (%)**	**24 (77,45)**	**10 (45,5)**	**0,02**
DAI, n (%)	**4 (12,9)**	**8 (36,4)**	**0,04**
TRC, n (%)	3 (9,7)	1 (1,9)	0,49
Localización de EI; Tricuspide	7 (22,6)	6 (27,3)	0,75
Adquisición; Nosocomial/RCS, n (%)	**20 (64,5)**	**8 (36,4)**	**0,05**
Microorganismos; S. Aureus, n (%)	5 (16,1)	6 (27,3)	0,32
SCoN, n (%)	16 (51,6)	7 (31,8)	0,17
BGN, n (%)	3 (9,7)	3 (13,6)	0,65
Clínica; Síntomas locales	15 (50)	8 (38,1)	0,57
Embolismos sistémicos, n (%)	7 (22,6)	5 (22,7)	0,99
Sepsis grave y/o shock séptico, n (%)	8 (26,7)	5 (22,7)	0,75
Insuficiencia Cardíaca, n (%)	2 (6,7)	3 (13,6)	0,4
Ecocardiografía; Vegetación, n (%)	19 (70,4)	16 (72,7)	1
Insf tricúspidea mod-sev, n (%)	5 (23,8)	3 (17,6)	0,64

Tabla 2. Manejo terapéutico y estancia de las cohortes con reimplante en uno y dos tiempos.

Variable, n (%)	Un tiempo (n=31)	Dos tiempos (n=22)	p
Duración de antibiótico hospitalario, m (RIQ); s	**4,29 (2,36-6,29)**	**4,71 (3,71-6,93)**	**0,14**
Tratamiento antibiótico			
Cloxacillina	11 (35,5)	7 (31,8)	1
Vancomicina	6 (19,4)	5 (22,5)	0,7
Daptomicina	4 (12,9)	5 (22,7)	0,35
+ gentamicina	5 (16,1)	9 (40,9)	0,06
+ rifampicina	4 (12,9)	3 (13,6)	0,94
Tiempo de extracción, m (RIQ); d	**15 (6-28)**	**15 (7-23)**	**0,74**
Días hasta negativización HC, m (RIQ); d	**6 (3 – 12)**	**7 (5 - 28)**	**0,25**
Estancia hospitalaria, m (RIQ); d	**26 (15-52)**	**32,5 (26-52)**	**0,21**

Tabla 3. Eventos clínicos de ambas cohortes.

Variable, n (%)	Un tiempo (n=31)	Dos tiempos (n=22)	p
Mortalidad al año	**0**	**0**	**-**
Recidiva	**2 (7,4)**	**2 (9,1)**	**1**

Conclusiones

- ✓ No se han observado diferencias significativas en el número de recidivas, duración del tratamiento antimicrobiano o mortalidad, por lo que **el reimplante en un tiempo podría considerarse en pacientes seleccionados.**

Gracias

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Distribución de casos por Hospitales			
Variable	**Total de reimplantes (n=55)**	**Un tiempo (n=31)**	**Dos tiempos (n=22)**
Virgen del Rocio	27 (49,1)	19 (61,3)	8 (36,4)
Virgen Macarena	8 (14,5)	3 (9,7)	5 (22,7)
Carlos Haya	4 (7,3)	1 (3,2)	1 (4,5)
Virgen de la Victoria	6 (10,9)	3 (9,7)	3 (13,6)
San Cecilio	2 (3,6)	-	2 (9,1)
Virgen de las Nieves	8 (14,5)	5 (16,1)	3 (13,6)

Table 2. Six-Month Outcomes According to Device Management Strategy

Management Strategy	Therapy Complete—No Sign of CIED Infection	Chronic Suppression—No Sign of CIED Infection	Repeat Infection	Patient Deceased
Original device maintained (n=53)	18 (34.0)	15 (28.3)	6 (11.3)	14 (26.4)
Device removed, not reimplanted (n=161)	123 (76.4)	7 (4.3)	1 (0.6)	30 (18.6)
Reimplanted same day (n=23)	16 (69.6)	2 (8.7)	1 (4.3)	4 (17.4)
Reimplanted in 1–7 days (n=59)	51 (86.4)	2 (3.4)	2 (3.4)	4 (6.8)
Reimplanted in 8–14 days (n=68)	58 (85.3)	3 (4.4)	0 (0.0)	7 (10.3)
Reimplanted in 15–21 days (n=28)	23 (82.1)	1 (3.6)	0 (0.0)	4 (14.3)
Reimplanted after 21 days (n=42)	35 (83.3)	0 (0.0)	1 (2.4)	6 (14.3)

Values are mean±SD or n (%). CIED indicates cardiovascular-implantable electronic device.