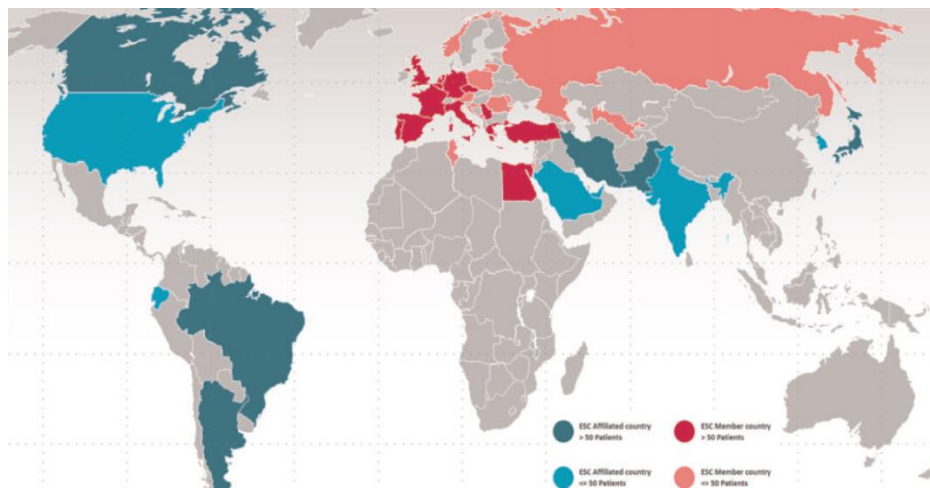


epidemiología actual de la EI efectos de la pandemia covid19

nuria fernández hidalgo
servei de malalties infeccioses
hospital universitari vall d'hebron

epidemiología actual de la EI

la geografía es importante



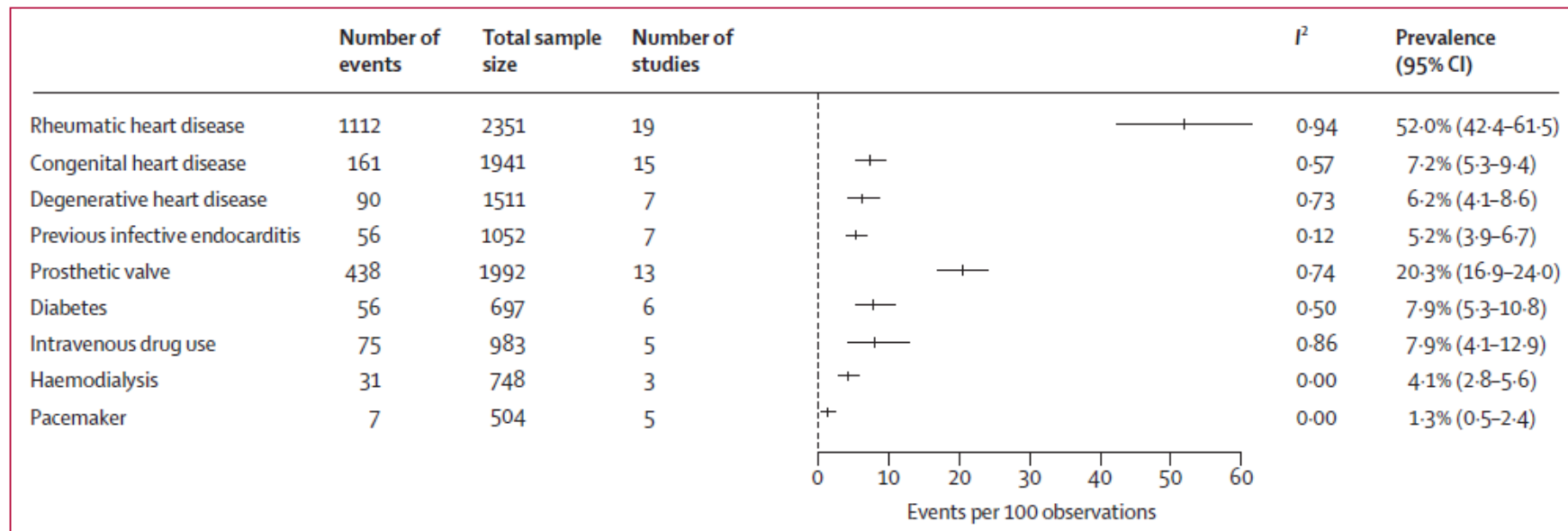


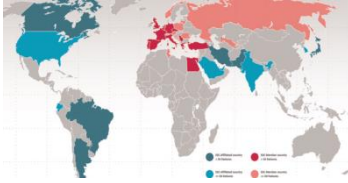
Figure 1: Pooled prevalence of risk factors for infective endocarditis

Errors bars are 95% CIs. This figure summarises results from several analyses. All corresponding forest plots are provided in the appendix (pp 17–25).



porcentaje de hemocultivos negativos

mortalidad superior a la “esperada”



ESC-EORP EURO-ENDO

3116 pacientes

156 hospitales

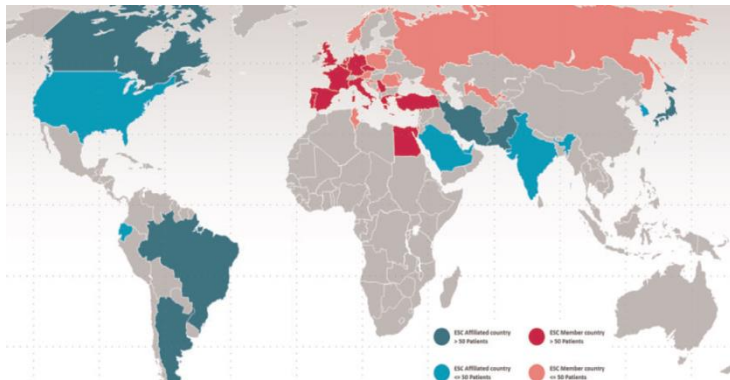
40 países

01/2016 – 03/2018 (1 año de reclutamiento, 1 año de seguimiento)

430 variables

El definitivas o posibles según criterios 2015 ESC guidelines

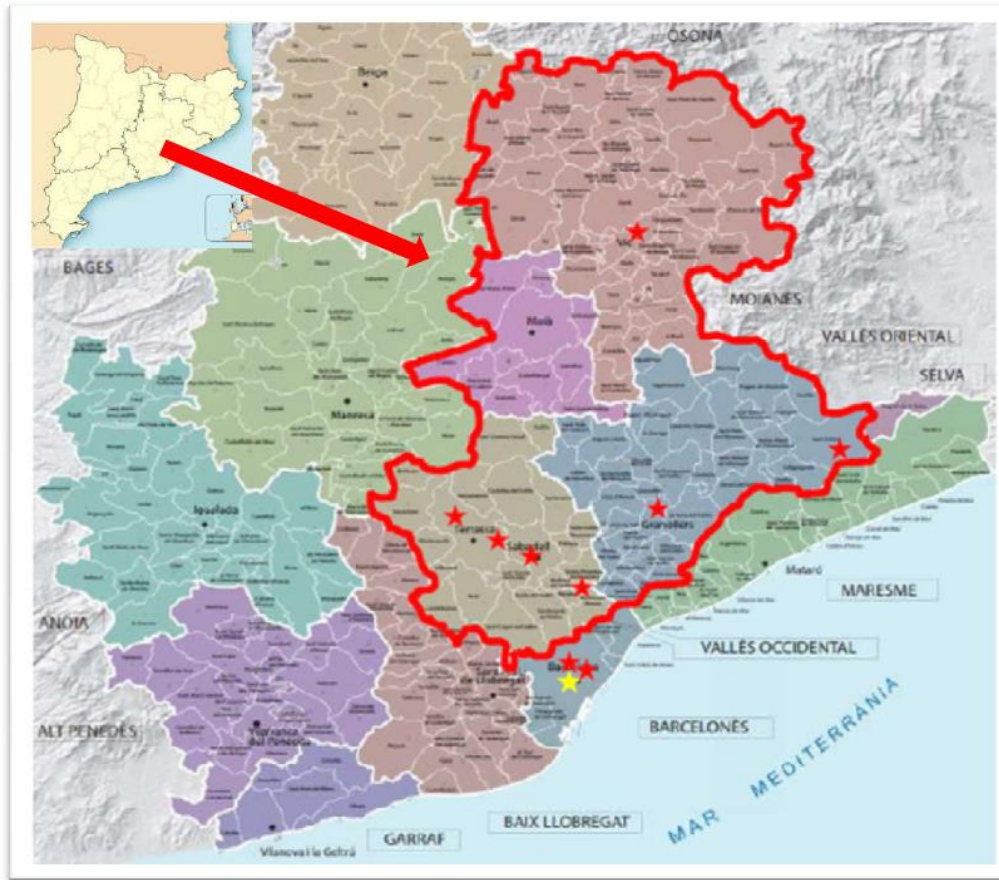
construyendo la realidad



cocinar los datos



terciarismo vs hospitales comunitarios

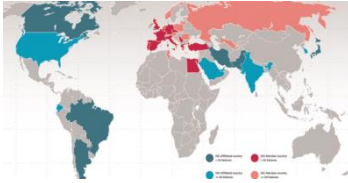


Àrea 2900 Km²

2.2 millones
habitantes

H. Clínic Barcelona
H. General Granollers
H. Mollet
H. Parc Taulí
H. Plató
H. Sagrat Cor
H. Terrassa
Mútua Terrassa
H. Vic

Central Catalonia 10 Endocarditis Teams (CC10ET)



ESC-EORP EURO-ENDO

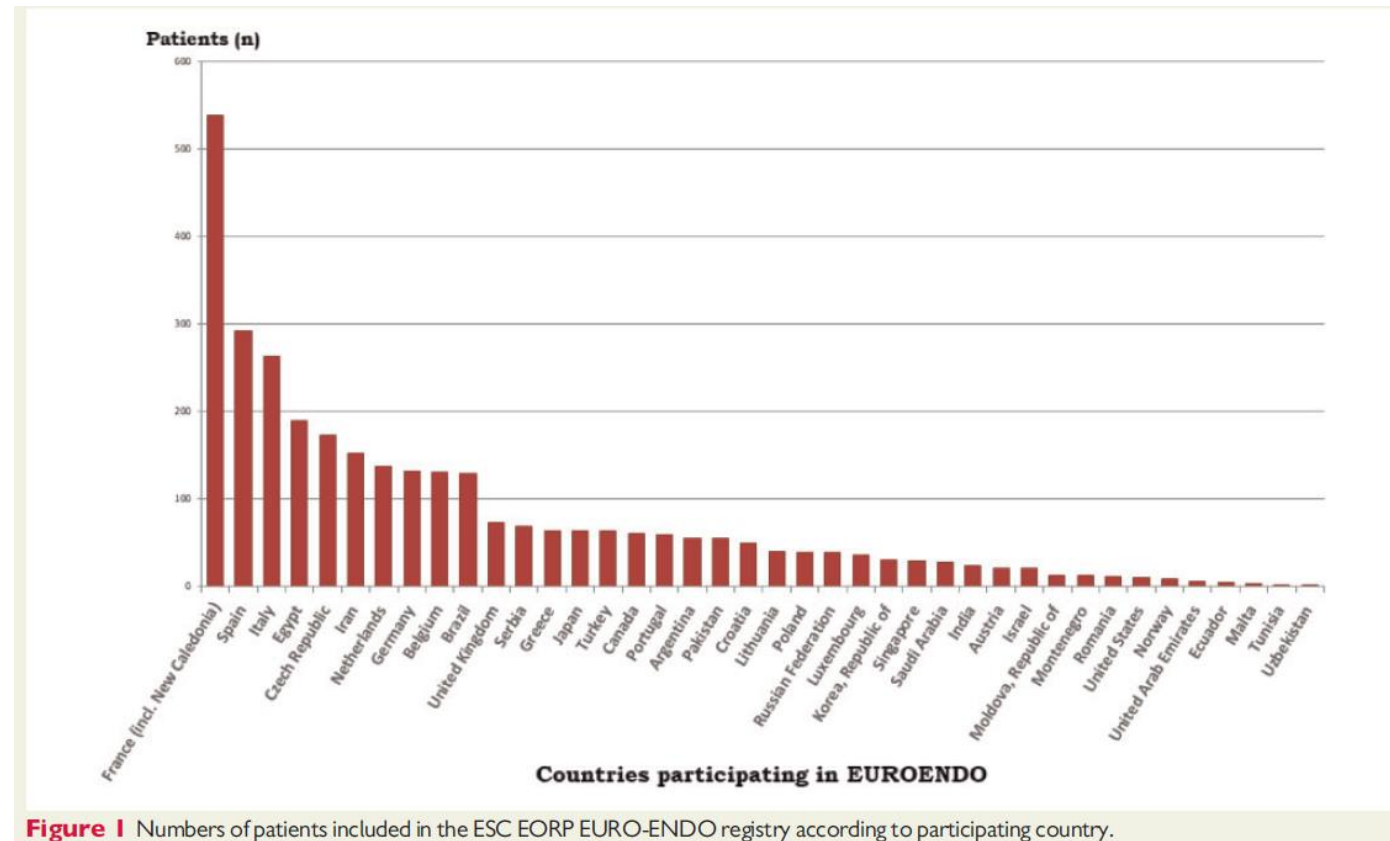


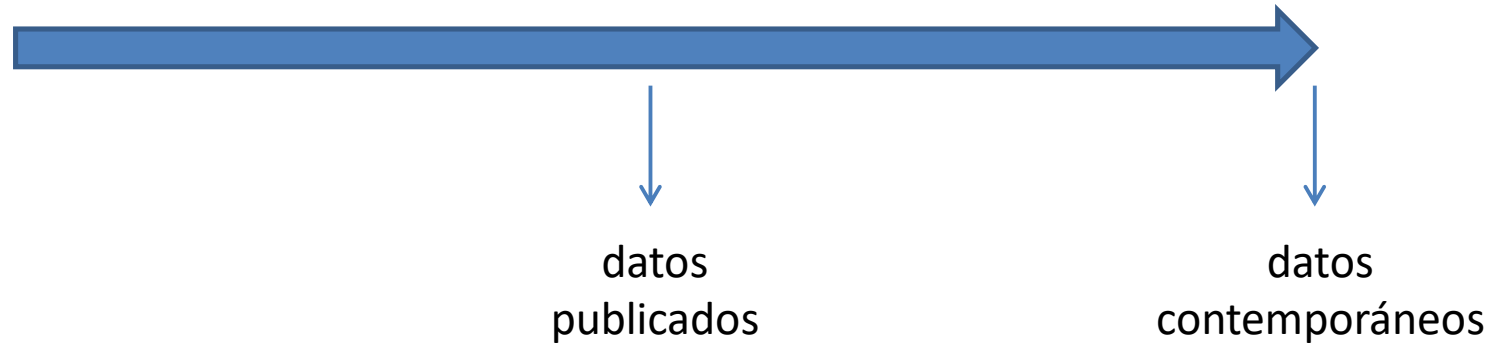
Figure 1 Numbers of patients included in the ESC EORP EURO-ENDO registry according to participating country.

ICE



Murdoch DR et al. *Arch Intern Med* 2009

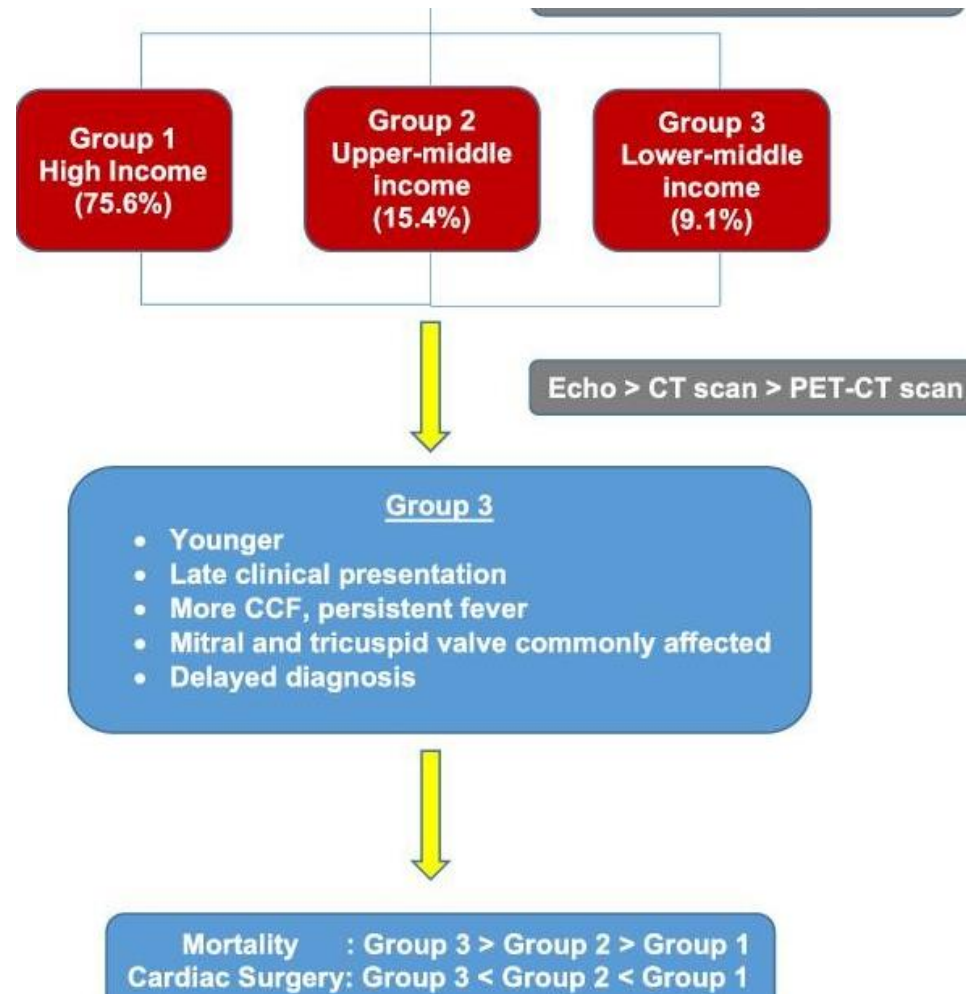
obsolescencia de la publicación



¿registros continuos?



aportaciones del EURO-ENDO



aportaciones del EURO-ENDO

Table 1 Patient demographics and clinical characteristics

	Total (n = 3116)
Demography	
Age (years)	
N	3116
Mean ± SD	59.25 ± 18.03
Median (IQR)	63.0 (46.0–73.0)
Age ≥ 65 years	1443/3116 (46.3%)
Age ≥ 80 years	375/3116 (12.0%)
Females (%)	969/3116 (31.1%)
History of cardiovascular diseases	
Heart failure	662/2840 (23.3%)
Congenital disease	365/3114 (11.7%)
Ischaemic heart disease	622/2897 (21.5%)
Atrial fibrillation	767/2918 (26.3%)
Hypertrophic cardiomyopathy	63/2840 (2.2%)
Known valve murmur	972/2840 (34.2%)
Previous endocarditis (%)	274/3116 (8.8%)
Device therapy	
Pacemaker	325/3116 (10.4%)
ICD (defibrillator)	125/3116 (4.0%)
CRT-D (with ICD)	72/3116 (2.3%)
CRT-P (pacing only)	15/3116 (0.5%)
Risk factors	
Previous stroke/TIA	340/2860 (11.9%)
Arterial hypertension	1502/3111 (48.3%)
COPD/asthma	318/3111 (10.2%)
Chronic renal failure	553/3113 (17.8%)
Dialysis	163/3113 (5.2%)
HIV	31/3038 (1.0%)
Hypo/hyperthyroidism	226/2820 (8.0%)
Chronic autoimmune disease	109/3103 (3.5%)
Cancer	361/3088 (11.7%)
Current pregnancy	8/3092 (0.3%)
Smoking	759/2938 (25.8%)
Intravenous drug dependency	212/3067 (6.9%)
Alcohol abuse	228/3003 (7.6%)
Immunosuppressive treatment	104/2840 (3.7%)
Long corticotherapy	127/2840 (4.5%)
Intravenous catheter	250/3104 (8.1%)

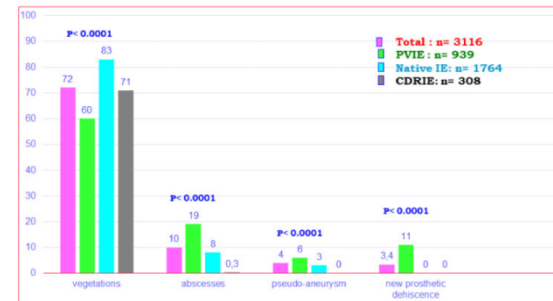
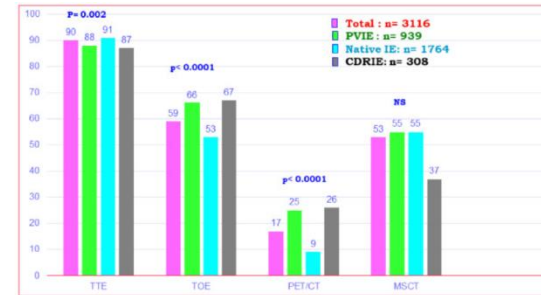


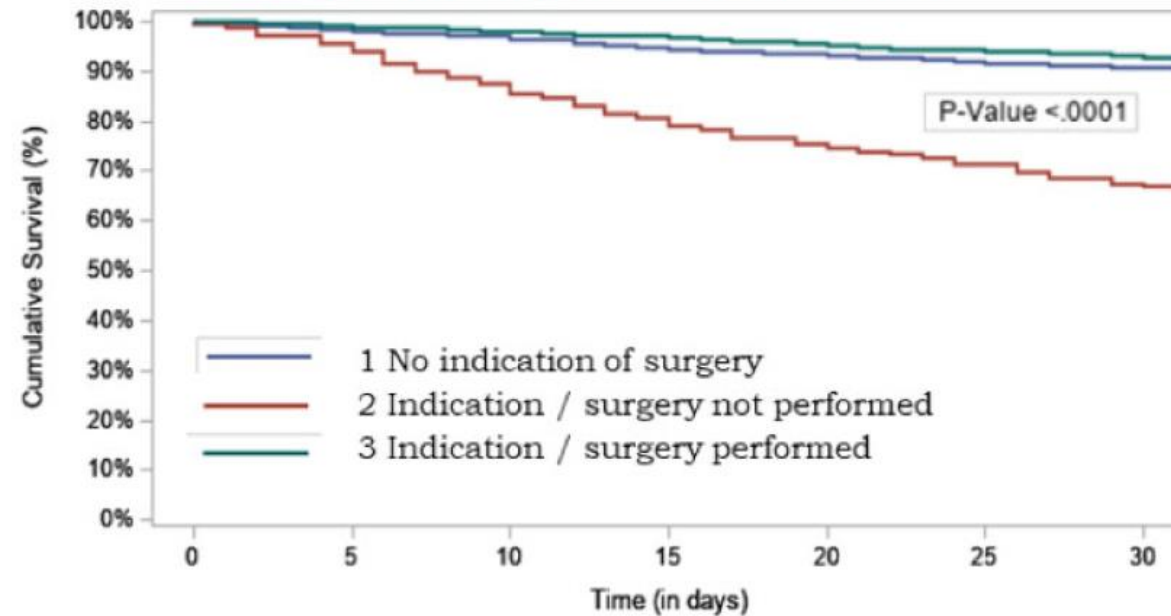
Table 2 In-hospital mortality

	Total (n = 3116)
Death	532/3116 (17.1%)
Cause of death	
Cardiovascular	151/531 (28.4%)
Non-cardiovascular	156/531 (29.4%)
Cardiovascular + non-cardiovascular	194/531 (36.5%)
Unknown	30/531 (5.6%)
If cardiovascular	
Heart failure	245/345 (71.0%)
Arrhythmia	42/345 (12.2%)
Cardiac perforation/tamponade	11/345 (3.2%)
Acute MI	8/345 (2.3%)
Cerebral embolism	41/345 (11.9%)
Pulmonary embolism	13/345 (3.8%)
Peripheral embolism	3/345 (0.9%)
Other cardiovascular	40/345 (11.6%)
If non-cardiovascular	
Neoplasia	12/350 (3.4%)
Sepsis	269/350 (76.9%)
Other	70/350 (20.0%)
If surgery performed	
Post-cardiac surgery	170/532 (32.0%)
Post-non-cardiac surgery	16/532 (3.0%)

aportaciones del EURO-ENDO

In-hospital mortality in EURO-ENDO

adjusted Kaplan-Meier curves



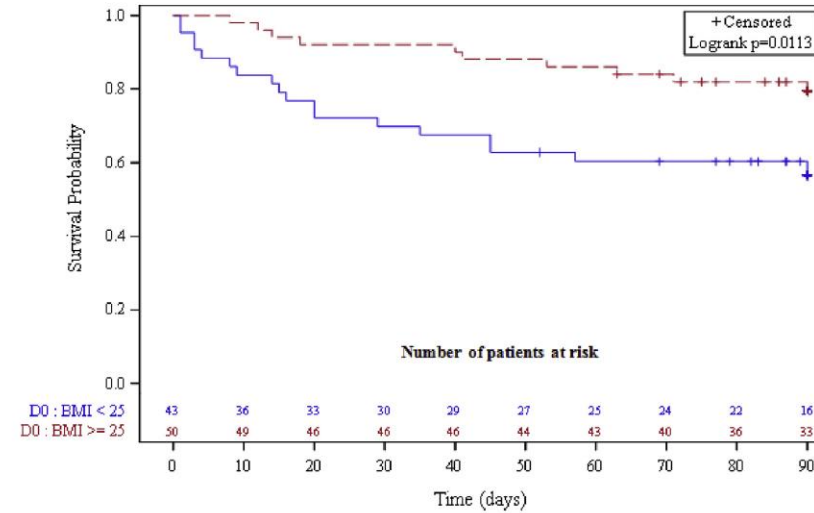
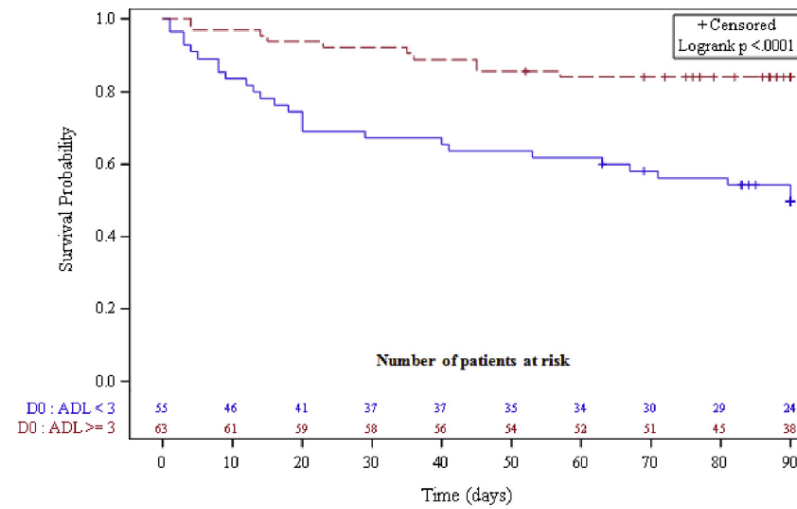
**Highest one-month mortality in patients with
failure to undertake surgery despite
a guideline recommended indication**

aportaciones del EURO-ENDO

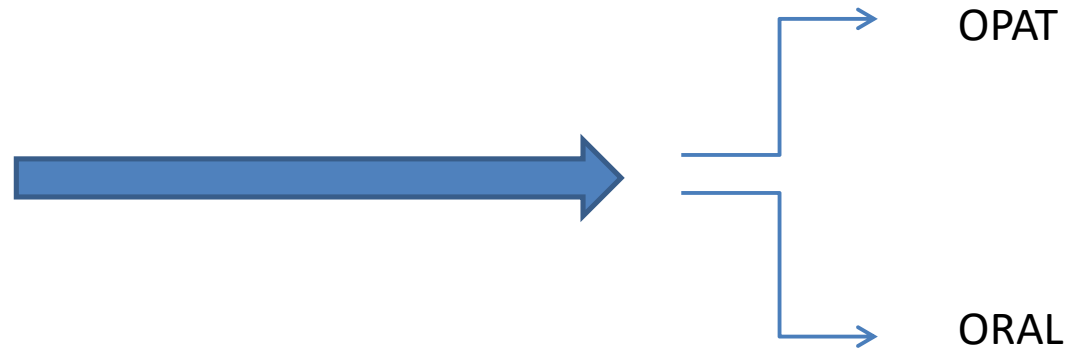
Conclusion

Although mortality rates are consistently higher in ≥ 80 yo patients than in < 80 yo patients in the general population, mortality of surgery in ≥ 80 yo is similar to < 80 yo after matching patients. These results confirm the importance of a better recognition of surgical indication and of an increased performance of surgery in ≥ 80 yo patients.

población geriátrica



población (no solo) geriátrica



Pericàs JM et al. *Open Forum Infect Dis* 2022
Herrera-Hidalgo L et al. *Antimicrob Agents Chemother* 2020
Hidalgo-Tenorio C et al. *Ann Clin Microbiol Antimicrob* 2019

pacientes no operables

Surgery was performed during hospitalization in 1596 (51.2%) patients. Following ESC guidelines, theoretical indication for cardiac surgery was present in 2160 (69.3%) patients. Among them, surgery was finally performed in 46.1% of PVIE, 53.7% of NVE, and surgical or percutaneous extraction in 65.3% of CDRIE.

pacientes no operados (con indicación)

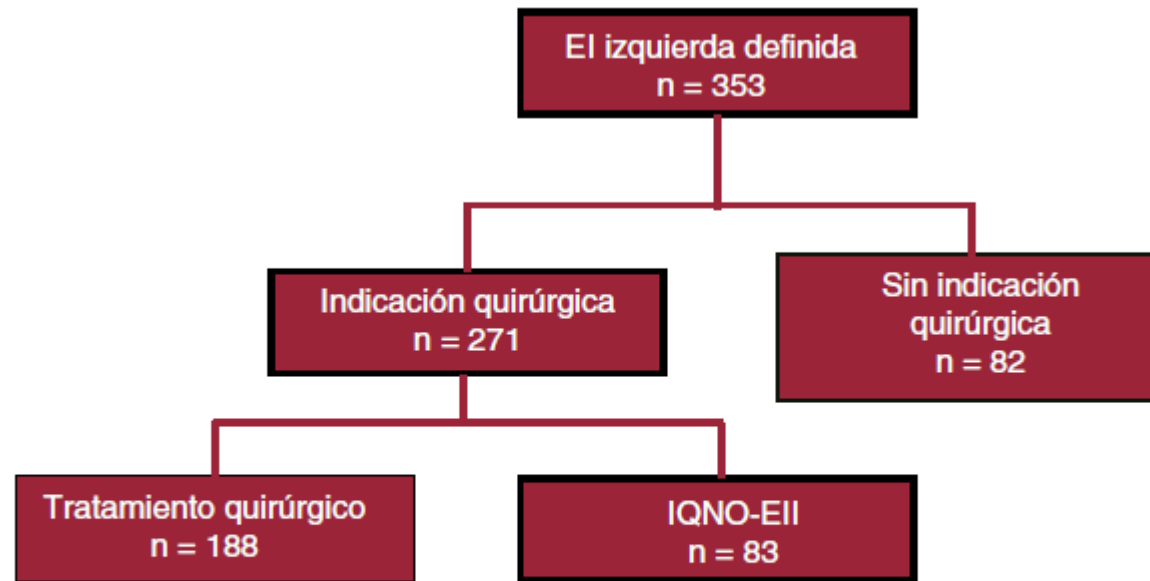


Figura 1. Diagrama de flujo de la población del estudio. IQNO-EII: pacientes con indicación quirúrgica no operados con endocarditis infecciosa izquierda.

pacientes no operados (con indicación)

	Cohorte sin emparejamiento			
	Todos (n = 271)	Cirugía (n = 188)	IQNO-EII (n = 83)	p
<i>Edad (años)</i>	64,3 ± 13,7	62,5 ± 12,8	68,4 ± 14,9	0,001
<i>El asociada con asistencia sanitaria</i>	101 (37,3)	59 (31,4)	42 (50,6)	0,003
<i>Índice de Charlson</i>	2 [1-5]	2 [1-4]	4 [2-6]	< 0,001
<i>Recuento plaquetario (× 10⁹/l)</i>	214 ± 105	226 ± 102	186 ± 106	0,003
<i>PCR (mg/l)</i>	86 [41-148]	82 [30-134]	101 [48-181]	0,033
<i>TFGe (ml/min/1,73 m²)</i>	58,7 ± 30,9	61,7 ± 29,4	51,8 ± 33,4	0,016
<i>Staphylococcus aureus</i>	97 (35,8)	61 (32,5)	36 (43,4)	0,084
<i>Streptococcus spp.</i>	76 (28,0)	59 (31,4)	17 (20,5)	0,066
<i>Ictus</i>	61 (22,5)	30 (16,0)	31 (37,4)	< 0,001
<i>Embolización</i>	151 (58,8)	96 (54,6)	55 (67,9)	0,043
<i>EuroSCORE I (%)</i>	20 [9-39]	14 [7-28]	34 [16-54]	< 0,001

pacientes no operados (con indicación)

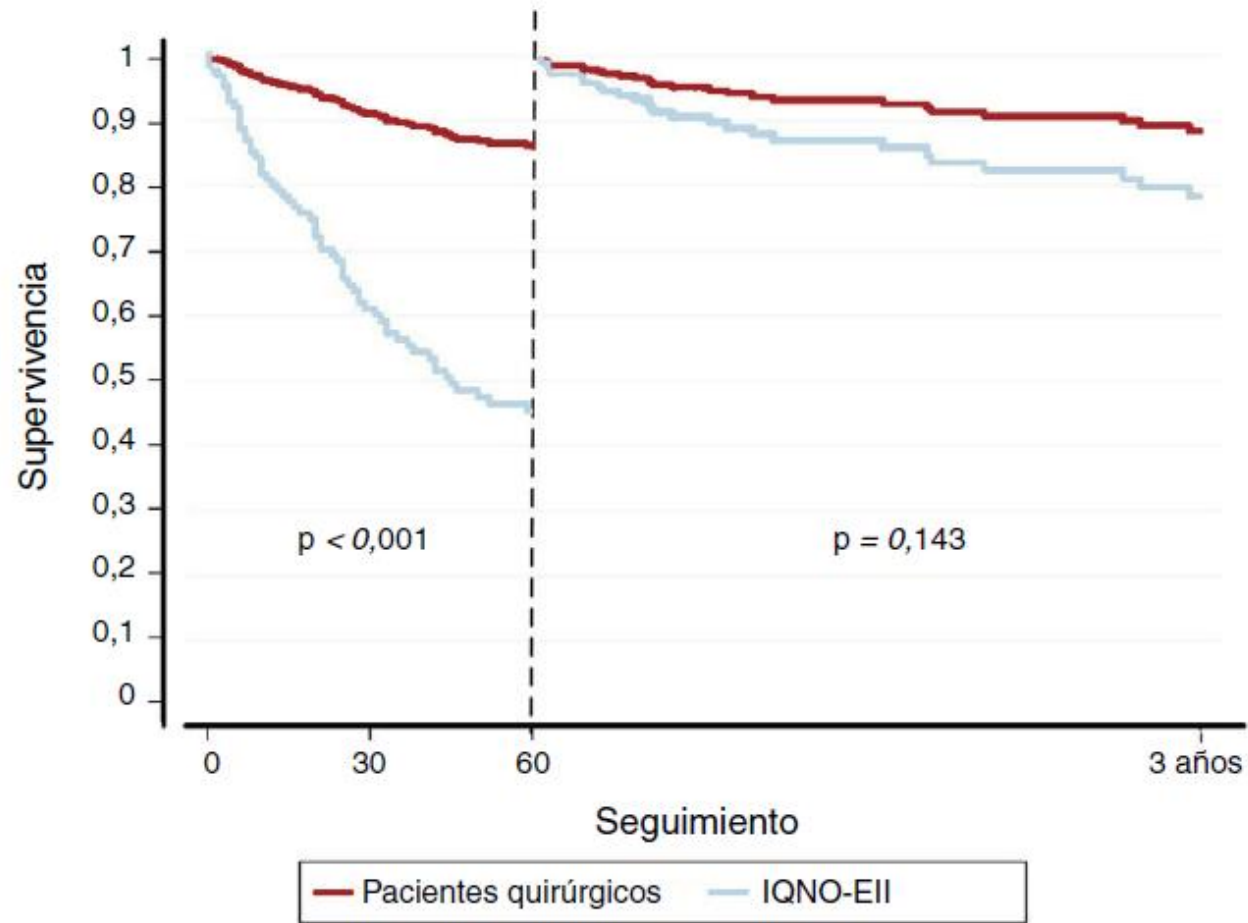
Tabla 4

Variables asociadas de manera independiente con la mortalidad a 60 días en los pacientes con indicación quirúrgica no operados y endocarditis infecciosa izquierda

	HR (IC95%)	p
<i>Shock</i>	7,69 (1,41-42,1)	0,019
Infección por <i>Staphylococcus aureus</i>	5,12 (1,50-17,50)	0,009
Insuficiencia valvular moderada o grave de nueva aparición	3,73 (1,09-12,77)	0,036
Recuento leucocitario	1,00 (1,00-1,01)	0,016

HR: *hazard ratio*; IC95%: intervalo de confianza del 95%.

pacientes no operados (con indicación)



tratamiento supresor en no operados

Parameters	Overall (n = 32)
Age [years]	72 ± 17
Male sex	25 (78.1)
Healthcare-associated IE	17 (53.1)
Type of infection	
Prosthetic valve IE	21 (65.6)
Early/late PVE	8/13
Intracardiac device-related IE	7 (21.9)
Native IE	4 (12.5)

Microbiology	
Coagulase-negative staphylococci	10 (31.3)
<i>Staphylococcus aureus</i>	7 (21.9)
<i>Streptococcus</i> spp	4 (12.5)
<i>Enterococcus faecalis</i>	4 (12.5)
Non-HACEK Gram-negative bacili	2 (6.3)
Negative blood cultures	2 (6.3)
Others	3 (9.4)

tratamiento supresor en no operados

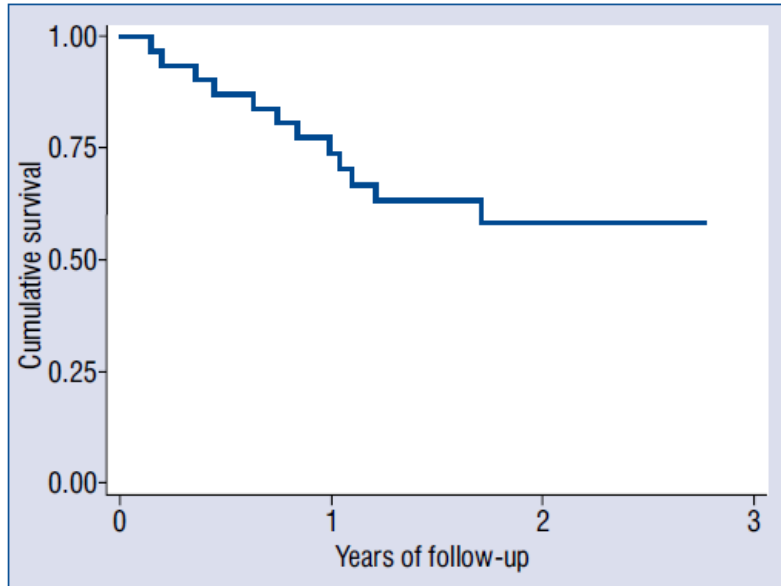


Figure 1. Survival in surgery indicated, but did not undergo surgery for infective endocarditis patients treated with long term antibiotic treatment.

Outcome

0 to 60-day mortality	1 (3.1)
Cumulative 3-year mortality	12 (37)
Related to IE	4 (12.5)
Relapses	4 (12.5)

¿TAVI en pacientes con endocarditis activa?

indicación de cirugía 75%

cirugía realizada 50%

razones para no operar: estado crítico, complicaciones SNC

TAVI contraindicada en EI

mortalidad 100% en IC refractaria

Presentado en ESGBIES Meeting ECCMID 2022 (Lisboa)

¿TAVI en pacientes con endocarditis activa?

hipótesis

se puede utilizar la TAVI de forma segura como tratamiento de rescate de la insuficiencia cardíaca congestiva en pacientes con endocarditis infecciosa,

durante el tratamiento -
durante los tres primeros meses tras su retirada -

¿TAVI en pacientes con endocarditis activa?

estudio retrospectivo, observacional, multinacional

adultos con EI en los que se ha implantado una TAVI
durante el tratamiento antibiótico –
durante los tres primeros meses tras su retirada -

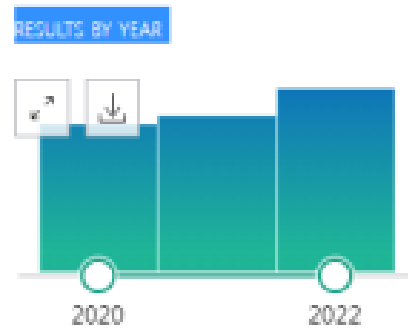
seguimiento mínimo de 3 meses tras la TAVI

...

efectos de la pandemia covid19



endocarditis [title] AND (covid [title] OR SARS-COV-2 [title])



2020: 16

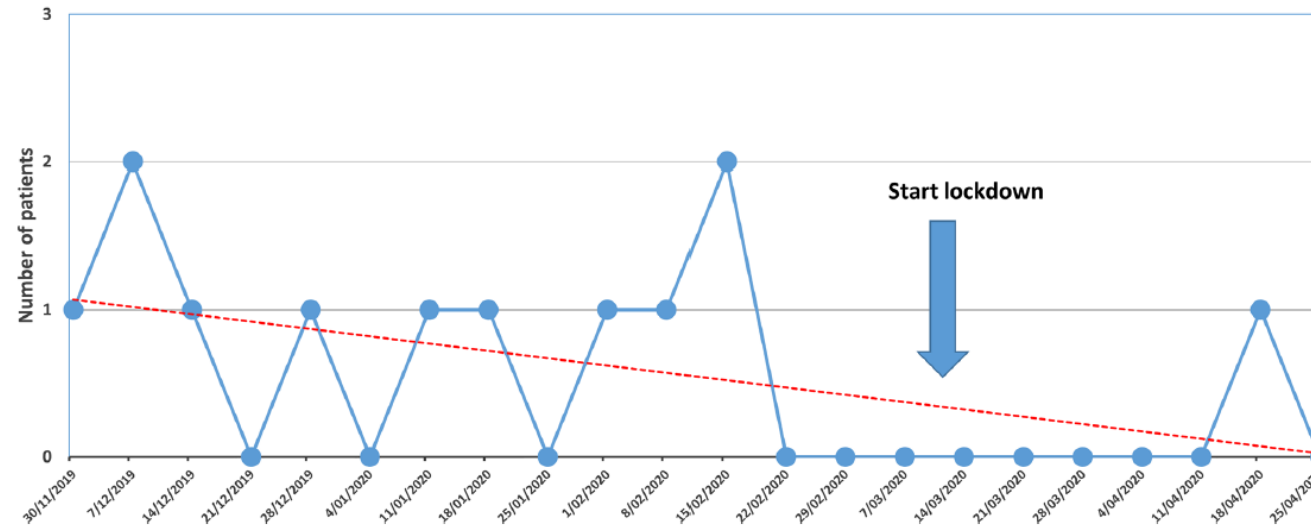
2021: 17

2022: 22

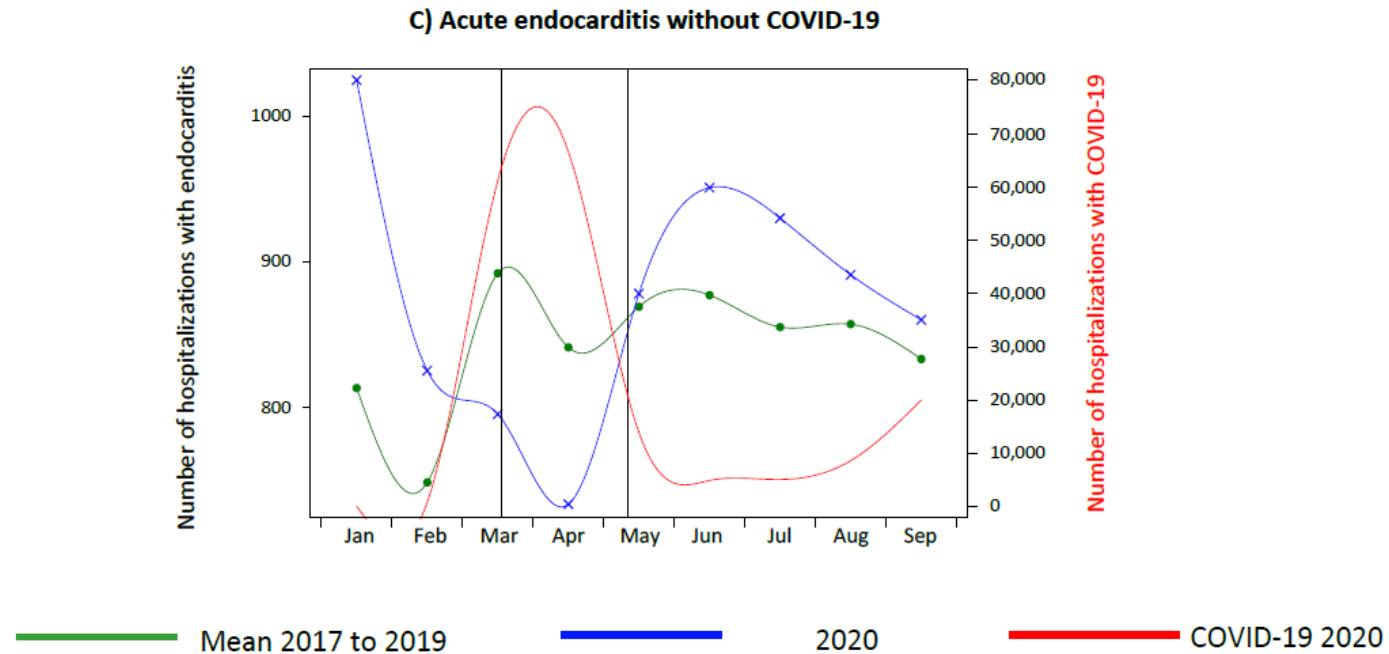
se diagnosticaron menos EI

Estudio (país)	2019	2020
Escolà-Vergé L (España)	136	90
Cosyns B (Francia)	70	47

OLV Hospital :Weekly numbers of admitted patients with endocarditis
30/11/2019-1/5/2020 (last 21 weeks of the observation period)



se diagnosticaron menos EI



Escolà-Vergé L et al. *Clin Microbiol Infect* 2021

Cosyns B et al. *JACC Cardiovasc Imaging* 2020

Van de Camp et al. *Clin Res Cardiol* 2020

Pommier T et al. *Biomedicines* 2022

alternativas al ETE

Value of Findings

In our study, both the diagnostic accuracy and clinical utility of CMR for IE appear questionable. CMR detected valvular vegetations in 2 cases but also missed valvular vegetations in 2 cases; in comparison, when TEE was performed in 3 of these 4 cases, valvular vegetations were detected in all 3 cases. Additionally, in 1 case with a prosthetic aortic valve, magnetic susceptibility artifact reduced the diagnostic utility of the study. Moreover, 3 cases were treated empirically for IE regardless of CMR findings, based on clinical suspicion alone. Finally, 6 cases were notable for delayed myocardial enhancement, but these results were deemed non-specific and did not guide medical decision-making. Taken together, these findings cast doubt on CMR as a viable diagnostic modality for IE at this time.

perfil y pronóstico de la EI en la primera ola

Table 1 (*continued*)

	2019 (<i>n</i> = 136)	2020 (<i>n</i> = 90) ^a	<i>p</i>
Poor vital prognosis due to comorbidities	6/23 (26.1)	7/23 (30.4)	0.743
Good outcome without surgery	4/23 (17.4)	4/23 (17.4)	1
Patient's rejection	2/23 (8.7)	0	0.489
In-hospital mortality (<i>n</i> = 224)^c	28/136 (20.6)	18/88 (20.4)	0.981
No indication for surgery	3/28 (10.7)	1/25 (4)	0.613
Surgery indicated and performed	16/85 (18.8)	10/42 (23.8)	0.512
Surgery indicated and not performed	9/23 (39.1)	7/21 (33.3)	0.690
	<i>N</i> = 108	<i>N</i> = 70	
Length of stay in survivors, days, median (IQR) (<i>n</i> = 178)^f	41 (30–54.5)	34 (24–45)	0.018
Hospital discharge (<i>n</i> = 178)^f			
Home	66/108 (61.1)	33/70 (47.1)	0.067
Outpatient parenteral antimicrobial therapy	25/108 (23.2)	22/70 (31.4)	0.221
Transferred to the hospital from which the patient was referred	10/108 (9.3)	10/70 (14.3)	0.300
Transferred to a rehabilitation clinic	7/108 (6.5)	5/70 (7.1)	1
Control blood culture performed during follow-up (<i>n</i> = 166)^g	78/99 (78.8)	41/67 (61.2)	0.014
	<i>n</i> = 99	<i>n</i> = 67	
Number of samples taken on separated days (<i>n</i> = 166) ^g	1 (1–2)	1 (0–1)	<0.001
	<i>n</i> = 108	<i>n</i> = 70	
Duration of follow-up of survivors at hospital discharge, days, median (IQR) (<i>n</i> = 178)^f	304.5 (216.5–368)	44.5 (28–60)	<0.001
Number of patients followed-up ≥ 30 days (<i>n</i> = 178)^f	104/108 (96.3)	50/70 (71.4)	<0.001
Mortality during first month of follow-up (after hospital discharge) (<i>n</i> = 154)	10/104 (9.6)	2/50 (4)	0.339
Mortality during follow-up (after hospital discharge) (<i>n</i> = 178)^f	13/108 (12)	3/70 (4.3)	0.077
Relapse during follow-up for survivors (<i>n</i> = 169)^d	2/102 (2) ^h	3/67 (4.5) ⁱ	0.386

endocarditis marántica (covid-19)



Figure 1. Chest x-ray showing multifocal infiltrates consistent with COVID-19 infection



Figure 2. CT angiogram of the chest revealing right upper lobe segmental and subsegmental emboli, and multi-lobar predominantly peripheral ground glass opacities and consolidation

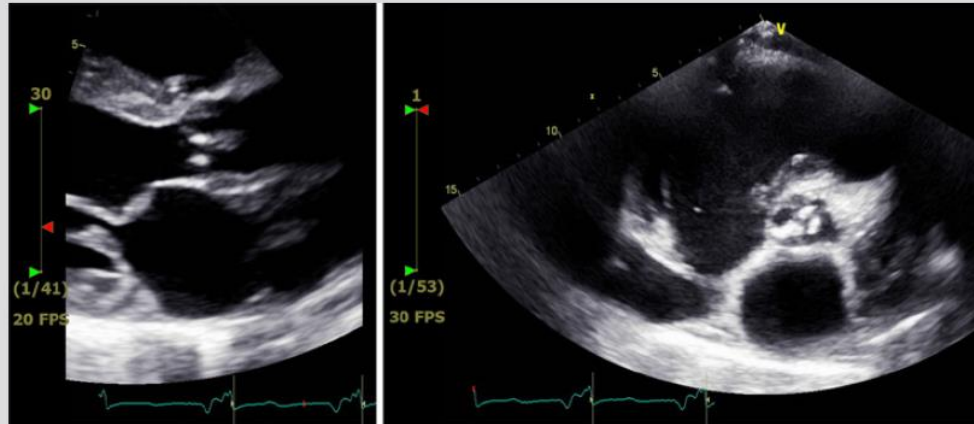


Figure 3. Echocardiogram showing aortic valve vegetation

...y después, ¿qué?

¿cambio en la incidencia, el perfil o el pronóstico?

videoconferencias...

¿más y mejor contacto con otros hospitales?

Ideas finales

reflexionemos sobre la nuestra realidad y adaptemos
los medios para comprenderla

aprendamos de la pandemia en términos de eficiencia
y colaboración entre centros

nufernan@gmail.com