

INTRODUCTION

- Outpatient Parenteral treatment (OPAT) of IE is being increasingly used, with very acceptable rates of hospital readmissions (10-26%) and relapses.
- However, information on oral treatment of infective endocarditis (IE), mainly left-sided, is very scarce.
- **Oral drugs** with excellent bioavailability are now available, which, theoretically, could allow an early discharge of selected IE patients.

OBJECTIVES

- Our goals were to analyse the frequency and the outcome of IE patients who completed their therapy as outpatients with oral drugs.

METHODS

- **Setting:** 1,550 bed tertiary care institution attending a population of 750,000 inhabitants in Madrid, Spain. OPAT services available.
- The 435 patients in the HGUGM GAME prospective cohort of Infectious Endocarditis (2008-2016) were analysed. Information was prospectively recorded in a pre-established clinical form. IE was defined according to the modified Duke criteria.

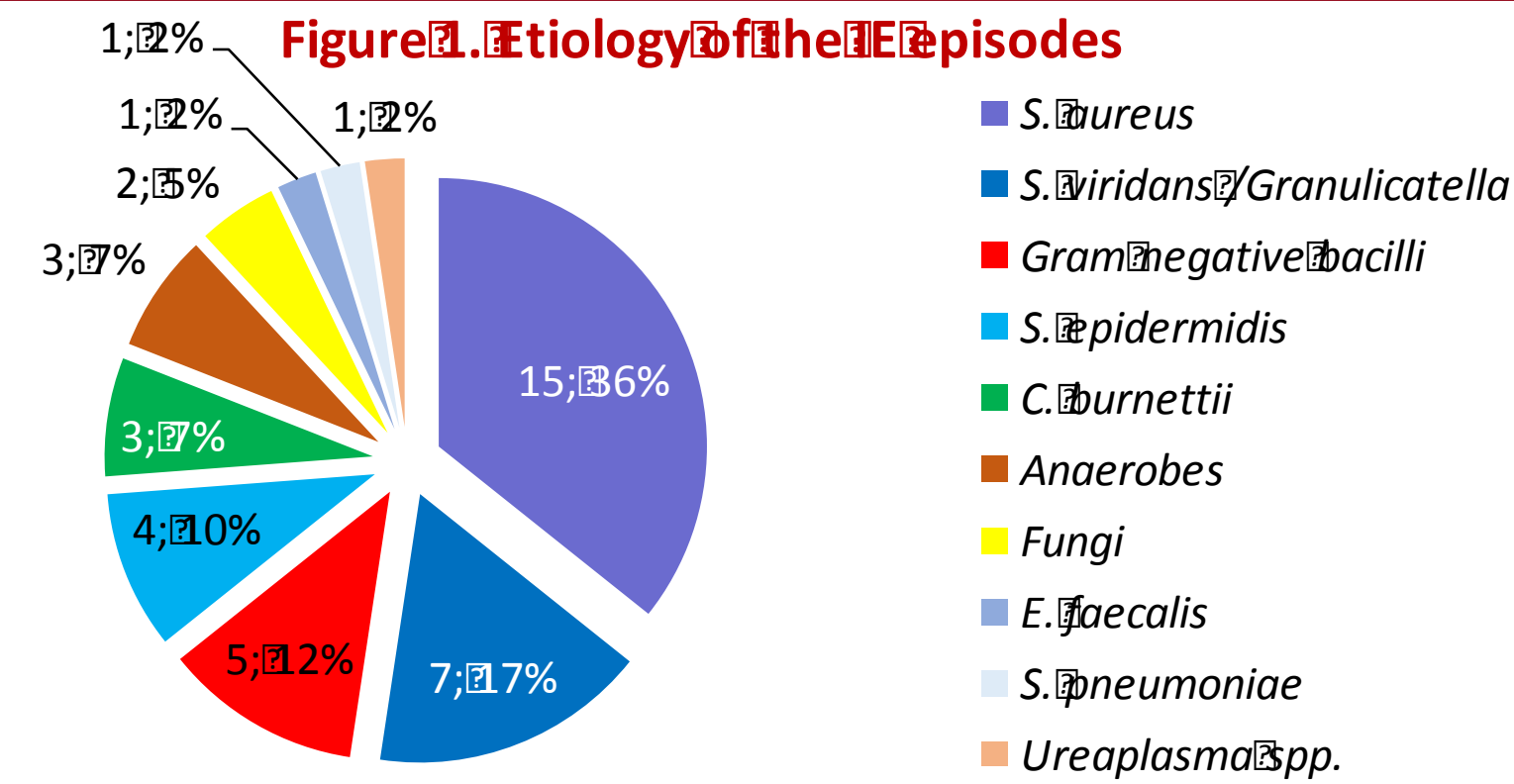
RESULTS

Overall **10%** of the IE episodes (n= 44) completed IE treatment ONLY with ORAL antimicrobials for at least 25% of the therapeutic course as outpatients.

General characteristics of patients that received oral therapy

- Mean age was 59 years old (SD 21) and 30 patients (68%) were male.
- Etiology: **S. aureus** (15; **34%**) predominated, followed by *S. viridans*/*Granulicatella* spp. (7; 16) (Figure 1). Two patients had unknown etiology.
- Infection was **mainly community-acquired** (27; 61.4%).
- Infected sites were: **native valves** (22, **50%**), prosthetic valves (13; 29.5%) and intra-cardiac material (9; 20.5%).

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S. aureus (15; 34%) (2 of them were MRSA), *S. viridans* / *Granulicatella* spp. (7; 16%), Gram negative rods (5; 11.4%), *S. epidermidis* (4; 9%), *C. burnettii* (3; 6.8%), anaerobes (3; 6.8%), fungi (2; 4.6%), *E. faecalis*, *S. pneumoniae* and *Ureaplasma* spp. (1 each).

- **Most** episodes involved the **left heart** (aortic 15; 34.1% / mitral 17; 38.6%)
- Distant septic metastasis were detected in 12 (27.3%) patients (4 spleen, 4 lung, 3 CNS, 2 spondylodiscitis).
- Heart surgery was performed in 29 patients (66%).

Oral Treatment

- Median duration of oral outpatient therapy was 19.5 days (IQR 14-41) and **corresponded to 46% of the IE treatment.**
- Most commonly used oral drugs were: **quinolones (29; 66%)**, mainly levofloxacin (22), followed by cotrimoxazole (4), linezolid (3), chloroquine-doxycycline (3), azoles (2), cephalosporins (2) and rifampin (6).

Clinical Outcome

- **Readmission** (after a median of 41 days; IQR 19-83) was required in 15 patients (**34%**). **None was related to failure of therapy:** pacemaker implantation (2), BSI of other origin, spondylodiscitis, respiratory insufficiency, Leishmaniasis, pneumonia, bleeding, anticoagulation adjustment, tachycardia, neoplasia and heart transplantation (1 each).
- There were **two early relapses** (*Aspergillus* endocarditis and *S. viridans* IE), but those patients had left hospital early, against medical advice.
- **One-year mortality** was **4.5%**, but none of the patients died because of the endocarditis.

Comparison of patients that received oral versus IV treatment

- Patients that received oral treatment had less comorbidities, received more valvular surgery and required more hospital re-admissions. (Table 1)
- **Mortality** at one-year follow up was **similar** in both groups.

Variables	Oral (N=44)	IV (N=391)	P
Age, median (IQR)	65 (50-76)	71 (58-78)	0.053
Sex (Males)	30 (68.2)	244 (62.4)	0.452
Comorbidities			
Heart failure	8 (18.2)	141 (36.1)	0.055
Hypertension	16 (36.4)	235 (60.1)	0.005
Dislipemia	17 (38.6)	161 (41.3)	0.609
Moderate / severe chronic renal disease	3 (6.8)	69 (17.6)	0.067
Charlsons comorbidity index, mean (SD)	3.5 (2.4)	5.3 (2.8)	<0.01
Affected valve			
Aortic	15 (34.1)	159 (40.7)	0.399
Mitral	17 (38.6)	208 (53.2)	0.067
Prosthetic	15 (29.5)	148 (37.9)	0.279
Native	24 (54.5)	223 (57)	0.752
Endovascular device	9 (20.5)	39 (10)	0.035
Etiology			
<i>S. epidermidis</i>	3 (6.8)	49 (12.5)	0.268
<i>S. aureus</i>	15 (34.1)	103 (26.3)	0.273
<i>Enterococcus</i> spp.	1 (2.3)	59 (15.1)	0.019
<i>Streptococcus</i> spp.	6 (13.6)	98 (25.1)	0.092
Others	16 (36.4)	46 (11.8)	<0.01
New heart failure	10 (22.7)	168 (43.1)	0.021
Persistent bacteremia	5 (11.4)	44 (11.3)	0.796
IE surgical treatment	29 (65.9)	172 (44.0)	0.006
Inhospital stay, median (IQR)	30 (22-47)	32 (17-52)	0.923
Early re-infection	2 (4.5)	2 (0.5)	0.068
Readmission	15 (34.9)	48 (19.4)	0.022
One year mortality	2 (4.5)	23 (5.8)	0.984

CONCLUSIONS

- ❖ Our series suggests that it is safe and feasible to complete the treatment of selected complex episodes of endocarditis with outpatient oral regimes.
- ❖ The rate of readmissions is similar to patients treated with OPAT, and is not related to treatment failure.