

Impact of COVID-19 on heart failure hospitalizations: one year after

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Background: Coronavirus disease 2019 (COVID-19) rapidly spread worldwide since it first emerged in December 2019, with more than 100 million cases reported to date, causing a great impact on healthcare systems. Heart failure (HF) is a major health problem. It affects about 10 million people in Europe and is the leading cause of hospitalization for patients older than 65 years. During the first wave of COVID-19 there was an important decrease in HF hospitalizations. Data regarding HF admissions during the second and third waves and inter-waves periods is scarce.

Purpose: To examine the impact of COVID-19 on HF hospitalizations during the first year of the pandemic and to compare the clinical characteristics and in-hospital outcomes of patients admitted during the three pandemic waves with those admitted the previous year during the same periods.

Methods: Data from a tertiary Heart Failure Unit in Southern Spain between 1 March 2020 and 28 February 2021 were compared to the corresponding time period in the previous year. The impact of the pandemic on weekly hospitalizations was assessed using a Poisson Regression model, with year, season and pandemic wave as covariates. Clinical characteristics and in-hospital outcomes of patients admitted during the three waves were compared to those admitted during the same periods one year after.

Results: A significantly lower weekly number of admissions for HF was observed during the three pandemic wave periods compared to all other included periods (inter-wave periods and same periods in the previous year) ($p=0.002$, IRR 0.81, 0.77–0.86). Figure 1 shows monthly HF admissions between 1 March 2020 and 28 February 2021 (pandemic year) and the previous year, as well as COVID-19 hospitalized cases in our area. Clinical characteristics and in-hospital outcomes of patients admitted during the COVID-19 waves and the same periods in the previous year are shown in Figure 2. Patients admitted during the COVID-19 waves were younger, and fewer had diabetes mellitus (DM), atrial fibrillation (AF) and valvular heart disease (VHD). There were no differences in clinical outcomes (intensive care unit admission, in-hospital mortality).

Conclusion: There was decline in HF hospitalization during the three waves of the pandemic year, but not during the inter-wave periods. Patients admitted during the wave periods had some clinical differences but similar in-hospital outcomes.

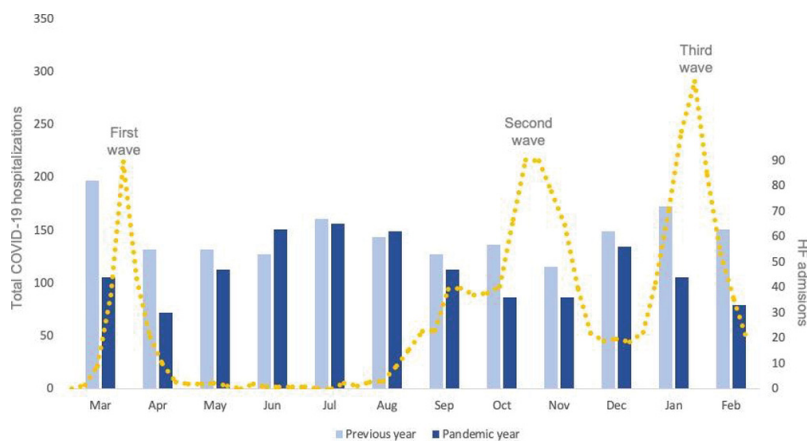


Figure 1

	Pandemic year (n=216)	Previous year (n=362)	P
Age, yr (mean ± SD)	69.9 ± 13.2	73.3 ± 12.7	0.002
Male (%)	143 (66.2%)	210 (58.0%)	0.051
DM (%)	87 (40.3%)	187 (51.6%)	0.009
HTN (%)	159 (73.6%)	283 (78.2%)	0.225
CKD (%)	78 (36.1%)	155 (42.8%)	0.136
Coronary artery disease (%)	94 (43.5%)	133 (36.7%)	0.113
AF (%)	84 (38.8%)	211 (58.3%)	0.001
COPD (%)	51 (23.6%)	103 (28.4%)	0.243
VHD (%)	73 (33.8%)	160 (44.4%)	0.014
HF rEF	90 (41.7%)	151 (41.7%)	1.000
NT-ProBNP (mean, IQR)	7959 (3441-15964)	6681 (3636-14418)	0.279
ICU (%)	7 (3.2%)	17 (4.7%)	0.519
In-hospital mortality (%)	16 (7.4%)	20 (5.5%)	0.376

Figure 2