



Short Communication

Increase in emerging cardiac pathology due to drop off primary prevention in SARS-COV 2 times

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Received: 18 January, 2024

Accepted: 26 February, 2024

Published: 27 February, 2024

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The SARS-COV 2 pandemic has disrupted many processes of care related to prevention, diagnostic, and therapeutic interventions, including emergency cardiac conditions. Primary care focused on COVID-19 management and vaccination has led to a preventive and therapeutic gap of many chronic conditions and risk factors, including hypertension, a main trigger for Acute Aortic Dissection (AAD).

The impact of the first SARS-CoV-2 wave and the nationwide lockdown from a public health policy point of view is well known. During the first lockdown, a significant decrease in emergency room visits, surgical emergencies, cardiac interventional activity, or management of acute coronary syndromes was reported [1,2].

However, data during subsequent waves on cardiac surgery emergencies, mainly AAD, are lacking. AAD is a life-threatening condition associated with high morbidity and mortality rates, and it remains a challenge for an early diagnosis and treatment [3]. Accordingly, this report aimed to describe the impact of the extended SARS-CoV-2 pandemic on the incidence of AAD.

This prospective, observational report included consecutive patients with AAD operated in a big tertiary referral center between January 2015 and January 2023. The center serves a

stable geographical area of ~1.5 million inhabitants in North-East of Spain. The diagnosis of AAD was established by computed tomography angiography in all patients. All patients were considered for surgical repair. Three groups were examined, as follows: 1) AAD pre-COVID19, between 2015 to 2019; 2) AAD COVID19-2020, including the first 2020 nationwide lockdown; and 3) AAD COVID19-2022, including the waves and partial lockdowns during 2021. There were no changes in surgical technique during the three periods.

A total of 111 patients admitted with a diagnosis of AAD were included during the study period. AAD accumulated incidence was 1. AAD pre-COVID19 12 patients/year; 2. AAD COVID19-2020/21 8 patients/year and 3. AAD COVID19-2022/23 - 21 patients/year. Arterial hypertension was the most frequent risk factor with a prevalence of 85%, 75%, and 70%, in the 3 groups, respectively ($p = 0.4$).

Remarkably, 58% of patients with hypertension in the AAD COVID-19-2021 group were untreated, significantly higher than AAD-PreCOVID-19 (26%) and AAD COVID-19-2020 (25%) ($p = 0.001$). Table 1 summarizes the clinical characteristics and mortality of each group during the studied period. There were no significant differences in mortality between periods.

**Table 1:** Clinical, surgical, and outcome data for the three groups of AAD patients.

	Pre-COVID19 n = 61	COVID19-2020 n = 8	COVID19-2021/23 n = 56
Prevalence, /year	11	8	23
Age, years ± SD	59.1 ± 11	62.2 ± 13	59 ± 13
Hypertension	40	3	33
Non-treated HTN, (%)	6	2	24
Dislipidemia	10	2	20
Diabetes mellitus	31	6	3
	25	1	9
Perioperative shock situation*	15 Tamponade	Tamponade	7 Tamponade
	5 NRL		2 NRL
	5 Visceral ischemia		
Cerebral perfusion	46 Axillary	5 Axillary	24 Axillary
	15 Bilateral	3 Bilateral	32 Bilateral
Surgery	20 Mechanical Bentall	2 Mechanical Bentall	4 Thoraflex
	3 Elephant trump	6 Wheat (T-T)	20 Mechanical Bentall
	38 Wheat (T-T)		32 Wheat (T-T)
Mortality, /year	4	1	2

Values are number of patients unless otherwise noted.* tamponade, neurological condition.

The main finding of the current report is a significant increase in the number of patients operated on per year with AAD diagnosis, when comparing the pre-covid era, and the early post-covid period, almost doubling the number. There is no simple explanation or causal relationship for this finding, but the less frequent visits to primary care for control of risk factors, and the incomplete assessment of them using alternative telemedicine approaches, not already completely validated, may in part explain the dramatic increase observed during 2021 [4,5]. It is particularly worrisome that hypertension after 2020 and in particular 2021–2022 was less frequently treated, and consequently, a likely trigger of more AAD episodes.

To summarize, it is critical, as the pandemic evolves towards an endemic disease, to balance the needs between good control of the covid disease, with individual primary care assistance and control of cardiovascular risk factors, ensuring a good follow-up of chronic conditions other than COVID-19.

Cardiovascular education and prevention continue to play a fundamental role in the prevention of any cardiac pathology.

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