Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

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Left Bundle Branch Block and Mortality in COVID-19 Patients

The prevalence of left bundle branch block (LBBB) in general population is commonly low but its prevalence significant increase in patients with chronic heart failure (HF).[1] Recent analyses have demonstrated that COVID-19 patients have a significant incidence of acute HF while those with a history of chronic HF are prone to developing acute decompensation. Moreover, these patients frequently develop acute present cardiac injuries which significantly increase the risk of death during the infection.[2] However, the prognostic role of LBBB in patients with SARS-CoV-2 infection has not yet been evaluated. Aim of this manuscript is to perform a brief meta-analysis on the impact of LBBB on short-term mortality risk in COVID-19 patients. The study was performed in accordance with the Preferred Report Items for Systematic Reviews and Meta-analyses (PRISMA) guidelines. For this purpose, MEDLINE and Scopus databases were systematically searched for articles, published in English language, from inception through May 1st, 2021 using the following Medical Subject Heading (MESH) terms: COVID-19 [Title/Abstract] AND Arrhythmias [Title/Abstract] OR Left bundle branch block [Title/Abstract]. Inclusion criteria were: (1) studies enrolling subjects with a confirmed diagnosis of COVID-19; (2) stratifying the population as survivors and nonsurvivors and (3) providing data on the presence of LBBB. Conversely, case reports, review articles, editorials/letters, and case series with less than 10 participants, randomized controlled trials and studies including duplicate populations and investigations evaluating the electrocardiographic consequences of specific COVID-19 therapy were excluded. References from the included studies were screened to potentially identify other investigations meeting the inclusion criteria. Ethical approval and informed consent were not required as the study did not directly enrol human subjects. The quality of the included studies was graded using the Newcastle −Ottawa quality assessment scale (NOS). Mortality risk data were pooled using the Mantel−Haenszel random effects models with odds ratio (OR) as the effect measure with 95% CI. Heterogeneity among studies was assessed using Higgins and Thomson I^2 statistic where I^2 values correspond to the following levels of heterogeneity: low (<25%), moderate (25% to 75%), and high (>75%). The presence of potential publication bias was verified by visual inspection of the funnel plot. Due to the low number of the included studies (<10), small-study bias was not examined as our analysis was underpowered to detect such bias. A predefined sensitivity analysis (leave-one-out analysis) was performed removing 1 study at the time, to evaluate the stability of our results. To further appraise the impact of potential baseline confounders, a meta-regression analysis using age, gender, arterial hypertension (HT) and diabetes (DM) as moderator variables was performed. All meta-analyses were conducted using Comprehensive Meta-Analysis software, version 3 (Biostat, USA). Initial search resulted in 1880 articles. After removing duplicates (n = 877) and applying our inclusion criteria only 5 studies,[3-7] enrolling 1580 patients (mean age 65 years old, 989 males) were included in the analysis. The general characteristics of patients enrolled are showed in Table 1. LBBB was presents in 45 (2.8 %) COVID-19 subjects. On pooled analysis, LBBB was significantly associated with higher risk of death in the short-term period (OR: 3.69, 95% CI: 1.12 to 12.0, p = 0.003, I^2 = 51%; Figure 1). Visual inspection of the relative funnel plot did not reveal significant evidence of publication bias. Sensitivity analysis yielded consistent results. Meta-regression showed no relationship with age (p = 0.88), gender (p = 0.62), HT (p = 0.50) and DM (p = 0.11). The results of present analysis demonstrated a higher mortality risk in COVID-19 patients with LBBB. Unfortunately, we were not able to assess if LBBB was already present before COVID-19 infection or it may be due to a cardiac complication/injury. Moreover, data regarding the prevalence of chronic HF were reported only two investigations not allowing a meta-regression for this variable. The moderate heterogeneity observed may probably be due to the design of the study which probably depends on the participants' inclusion criteria as well as on the study designs and inherited biases. Further larger

Table 1
General characteristics of the patients enrolled

Author	Patients enrolled	Mean age (years)	Males N, (%)	S N, (%)	NS N (%)	HT (%)	CAD (%)	COPD (%)	DM (%)	HF (%)	NOS
Antwi-Amoabeng et al.[3]	186	60 [18-95]	99 (53.2%)	154 (82.8%)	32 (17.2%)	(43.1%)	(3.2%)	(4.8%)	(37.1%)	(9.7%)	8
Li et al.[4]	113	67.3±14.1	68 (60.1%)	63 (55.7%)	50 (44.2%)	(43.3%)	NR	(10.6%)	(18.5%)	NR	8
McCullough et al.[5]	756	63.3±16.0	478 (63.2%)	666 (88%)	90 (11.9%)	(56.5%)	(14.4%)	NR	(29.4%)	(7.3%)	8
Lanza et al. [6]	324	65.9±15.2	214 (66%)	280 (86.4%)	44 (13.5%)	(52.2%)	NR	NR	(11.4%)	NR	8
Denegri et al. [7]	201	68.5±14.7	130 (64.6%)	159 (79.1%)	42 (20.9%)	(64.3%)˚ (54.4%)˚˚	(33.3%)˚ (13.3%)˚˚	(4.9%)˚ (7%)˚˚	(26.2%)˚ (16.5%)˚˚	NR	8

S = Survivors; NS = nonsurvivors; HT = Arterial Hypertension; CAD = Coronary artery disease; COPD = Chronic obstructive pulmonary disease; DM = Diabetes mellitus; HF = Heart failure: NOS = Newcastle−Ottawa quality assessment scale.
For non-survivors group:˚˚For survivors group.

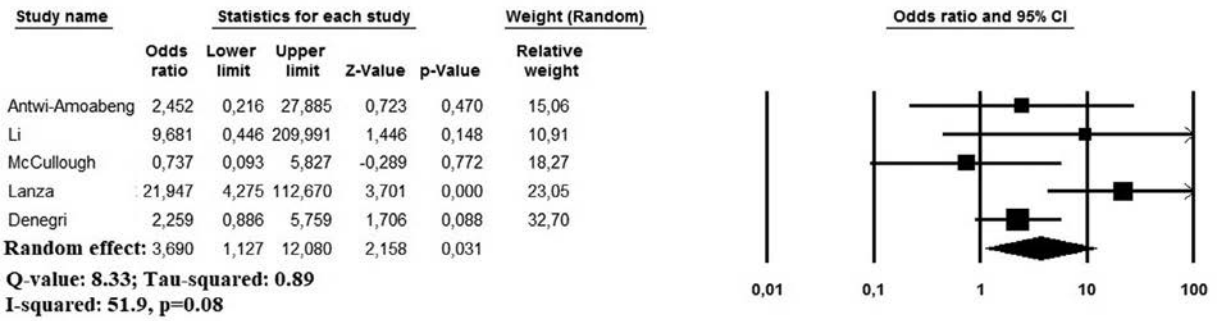

Figure 1. Forest plot investigating the mortality risk due to right bundle branch block in COVID-19 patients using a random-effect model.

clinical studies are needed to confirm our preliminary results.

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Efficacy of Sacubitril-Valsartan in Patients With Reduced Left Ventricular Ejection Fraction

Neurohormonal activation is a principal target of heart failure (HF) therapies. Augmentation of vasodilatory and natriuretic peptides through inhibition of neprilysin with the angiotensin receptor-neprilysin inhibitor (ARNI) is proven to reduce death and HF hospitalizations in patients with HF and reduced ejection fraction (HFrEF) compared with enalapril in the PARADIGM-HF.[1] The profile of patients enrolled in the study included predominantly NYHA II and III patients, elevated brain natriuretic peptide levels and previous HF hospitalization. Possible mechanisms for greater clinical benefit with ARNI compared with enalapril included greater blood pressure lowering[1] and reduced requirement for diuretic.[2] Furthermore, the use of ARNI