MINI REVIEW

During the COVID-19 pandemic, there was an unusually high number of mortality among patients with cardiovascular illnesses

Shalu Pandey

Pandey S. During the COVID-19 pandemic, there was an unusually high number of mortality among patients with cardiovascular illnesses. Clin Cardiol J. 2022; 6(3):23-25.

ABSTRACT

Coronavirus infection increases the chance of death due to cardiovascular diseases (CVDs) (COVID-19). There are also concerns that the pandemic has impacted acute cardiovascular care supply and demand. We calculated both 'direct' (via infection) and 'indirect' (through changes in healthcare) excess mortality in particular CVDs. Data on mortality suggests that indirect effects on CVD will be delayed rather than immediate (peak RR 1.14). In eight hospitals throughout China, Italy, and England, CVD service activity dropped by 60–100% compared to pre-pandemic levels. Even after reducing the lockdown, activity in China remained below pre-COVID-19 levels for 2–3 months, and activity in Italy and England is still low. The supply and demand for CVD services has decreased considerably across countries, posing the risk of significant, but avoidable, excess mortality during and after the pandemic.

Key Words: *Cardiovascular disease, Coronavirus-2019, Global health, Health policy, Heart Failure*

INTRODUCTION

Coronavirus disease 2019 (COVID-19) has had unintended repercussions for health services that are not affected by COVID. When compared to pre-COVID-19 levels, we saw a decrease in urgent cancer referrals and chemotherapy. Reduced myocardial infarction (MI) presentation and treatment in Italy and the United States suggests care effects, but services have not been researched across specific cardiovascular diseases (CVDs), countries, or pandemic stages. COVID-19 has a significant prevalence and mortality rate in people with CVD, according to early findings from Wuhan, China. This has been validated across countries, particularly in people with coronary heart disease (CHD) and heart failure (HF). CVD, particularly HF, was included in the UK government's policy for 'physical distancing' in high-risk groupings for COVID-19, which was released on March 16, 2020. Prior to the UK lockdown on March 23, 2020, an additional 1.5 million persons in England (with 'particularly vulnerable' conditions) were advised to undergo at least 12 weeks of 'shielding,' excluding those with CVD [1]. A better understanding of the pre- and post-COVID-19 mortality risk for certain CVDs could aid in making decisions and regulations about physical isolation. As a result, COVID-19 has two types of effects on persons and health systems: (i) direct infection and (ii) indirect system strain and associated behavior changes.

Those with cardiovascular disease, which is responsible for the majority of worldwide morbidity and mortality, are likely to be disproportionately affected. Aside from immediate effects, a systematic analysis of recent and longer-term patterns in CVD services may aid in determining the date and manner of lockdown leave, as well as plans for any subsequent infection peaks. Furthermore, reductions in referral, diagnosis, and treatment rates, which are induced by 'supply' (e.g. poorer healthcare access) and/or 'demand' (e.g. delayed presentation), may have fatal long-term implications, although this has not been researched. Electronic health records (EHRs) have been employed in research on a variety of specific CVDs, allowing for new insights on direct and indirect COVID-19-related excess fatalities throughout the spectrum of care and across incident and prevalent CVD [2].

We used I national mortality data for England and Wales to look into trends in non-COVID-19 and CVD excess deaths; (ii) routine data from hospitals in England, Italy, and China to look into indirect effects on CVD referral, diagnosis, and treatment during the pandemic; and (iii) population-based EHR in England to look into pre- and post-COVID-19 mortality by underlying risk factors for people with incident and prevalent CVD.

Department of Biomedical Sciences, University of Delhi, India

Correspondence: Shalu Pandey, Department of Biomedical Sciences, University of Delhi, India, E-mail: shalu.pandey.71997@gmail.com

Received: 07-May-2022, Manuscript No. PULCJ-22-5007; Editor assigned: 09-May-2022, PreQC No. PULCJ-22-5007(PQ); Reviewed: 16-May-2022, QC No. PULCJ-22-5007(Q); Revised: 20-May-2022, Manuscript No. PULCJ-22-5007(R); Published: 30-May-2022, DOI: 10.37532/pulcj.22.6(3).23-25.

DISCUSSION

There are four conclusions in this first examination of large-scale population-based EHR across 16 unique CVDs and multi-morbidity in the COVID-19 setting. First, widespread interruption of CVD services, including referral, diagnosis, and treatment (as observed in the United Kingdom, Italy, and China) may contribute to an increase in mortality. Second, patients with CVD have high frequencies of 'high-risk' and 'very vulnerable' diseases, which are commonly present in combination and vary by CVD type. Third, we forecast a large increase in CVD-related fatalities over a one-year time horizon, owing to the possibility of delayed indirect effects. Fourth, increased fatalities from CVD, both prevalent and incident, suggest that access to acute and chronic CVD care should be prioritized during future pandemic waves, both directly and indirectly [3]. In the COVID-19 setting, professional organizations immediately produced evidence-based CVD management guidelines. Our research focuses on the pandemic's actual and projected influence on CVD healthcare provision in several nations at various levels of response. Almost all CVD healthcare activities in Wuhan peaked at the same time. Although Italy and the United Kingdom were hit later, CVD services were and continue to be harmed during the pre-lockdown and lockdown phases. Indirect impacts may appear over at least a year, rather than concurrently with activity decreases found across countries, as evidenced by the lack of changes in CVD excess deaths in ONS data [4]. Overall, these findings highlight COVID-19's indirect effects, assisting in the quantification and modeling of true 'relative impact,' as well as the relative contributions of pandemic vs. lockdown on CVD services. We suggest that during the coming year, governments should monitor near-real-time service activity, as well as COVID-19 and non-COVID-19 mortality, to better understand and minimize excess deaths in people with CVD, particularly in countries that are still in the early stages, such as Brazil.

Based on our risk estimations and COVID-death data to far, there is discussion regarding which conditions should be on 'high-risk' and 'very susceptible' lists of disorders for physical isolation rules, which should include some CVDs and combinations of comorbidities. CVD has a high prevalence, incidence, and death rate, which varies with arterial area. Pre-COVID-19 incidence rates for AF, CHD, HF, stable angina, and DVT are now shown to be the greatest [5]. The prognosis differs depending on whether the disease is new or old, the type of CVD, and the number and combination of comorbidities, underscoring the need for personalized risk prediction throughout CVD. On a different note, our findings call into question the justification for using composite endpoints like 'MACE' (major adverse cardiovascular events) in trials and other investigations, given the significant variability of risk across different types of CVD. At RR 1.5, there would be 50 937 additional deaths in people with CVD at a 10% population infection rate, with larger rates at increasing infection rates. An early lockdown, such as in New Zealand or Kerala, India, reduces overall deaths [6]. In countries like the United Kingdom and the United States, however, delayed lockdown may increase COVID-19's direct and indirect impacts, as evidenced by growing non-COVID-19 mortality in ONS data. COVID-19 and non-COVID-19 deaths can be averted by I acting early and reducing infection rates through broad testing, strict physical isolation and suppression regimes, and (ii) focus on the CVD burden that is preventable. For example, heart failure, myocardial infarction, ischemic stroke, and atrial fibrillation are common illnesses with significant mortality rates, all of which can be treated with evidence-based therapy.

The same is true for common CVD comorbidities, which frequently occur in clusters: hypertension, CKD, cancer, COPD, and diabetes, highlighting the significance of integrated CVD and risk factor care both before and after COVID-19 [7]. Our findings could have ramifications for which components of health care (acute vs. chronic, treatment vs. prevention, and across various CVDs) ought to be prioritized at different pandemic stages. Although there is a known demand for NCD care in humanitarian emergencies, NCD surveillance is lacking in pandemic preparedness, planning, and response, particularly in low- and middle-income countries, where our findings will be amplified. The learning health system concept30, in which near real-time data informs science, evidence, and care, was not utilized to its full potential during the COVID-19 epidemic, but our CVD referral, diagnostic, and treatment data demonstrate that data does not have to be difficult. Our research makes use of a large-scale, nationally representative EHR with verified definitions for a wide range of CVDs and comorbidities. Real-time service data from three nations is presented. There are a few restrictions. In the United Kingdom, our study population accounted for 5% of the total population. Outside of the United Kingdom, we don't have any country-level statistics. Retrospective EHR data is used in our risk and excess death studies. Our model employs peak RR estimates and assumes a constant infection rate and RR. It does not account for changes over time. COVID-19's predicted impact may vary depending on the expected RR. Only UK (ONS) administrative data was available, thus we used service data from a few hospitals. Regarding CVD services, we do not report primary care or community-level data. We used limited comorbidities and simple multi-morbidity counts in our models, and we didn't look at the impact of ethnicity. We assumed that all CVDs had the same impact[8]. The key outcome of this study is that the number of AMI hospitalizations in Italy decreased dramatically during the COVID-19 epidemic. In fact, during the epidemic, AMI admissions were cut in half compared to the same period the previous year. The current study does not attempt to identify the processes that lead to a decrease in myocardial infarction admissions. Nonetheless, it's easy to speculate that the phenomena were caused by a variety of causes rather than a single process. First, it's probable that the hospital's concern of spreading infection has hampered access to emergency medical care (EMS), especially after the news broke that the virus had been widely transmitted among hospitalized patients and healthcare workers due to a lack of personal protective equipment. Despite the fact that one could predict a bigger impact in the north, which is the most afflicted area, the same reduction of AMI admissions across Italy appears to point in that direction. The fact that the emergency medical system was focused on COVID-19 and most healthcare resources were shifted to manage the pandemic is a second theory. This could have led to a shift in patient and healthcare system attitudes toward deferring less urgent situations. It's also worth noting that in this COVID-19 outbreak, the period between first medical contact and coronary revascularization in STEMI patients was significantly longer [9]. This is a critical issue because it has previously been demonstrated that primary PCI and reperfusion therapies are necessary but insufficient: the efficiency of the care pathway in expediting each step of the process is critical for STEMI patients, but it is also important for patients with other coronary syndromes. In this regard, the pandemics significant increase in case fatality and complication rates points in the same way.

CONCLUSION

During the COVID-19 pandemic, there is a significant needless burden of extra death in persons with CVD. More integrated approaches that focus on reducing COVID-19 infection rates as well as controlling CVD and comorbidities can help to reduce excess CVD fatalities.

While the focus of healthcare systems, public opinion, the media, and patients was on the COVID-19 pandemic, a concerning decrease in AMI admissions was seen across Italy, accompanied by an increase in case fatality and complication rates. To avoid a large and long-term social damage, actions must be implemented quickly.

REFERENCES

1. De Rosa S, Spaccarotella C, Basso C, et al. Reduction of hospitalizations for myocardial infarction in Italy in the COVID-19 era. Eur Heart J. 2020;41(22):2083-2088.
2. De Filippo O, D'Ascenzo F, Angelini F, et al. Reduced rate of hospital admissions for ACS during Covid-19 outbreak in northern italy. N Engl J Med. 2020;383(1):88-89.
3. Garg S, Kim L, Whitaker M, et al. Hospitalization rates and characteristics of patients hospitalized with laboratory-confirmed coronavirus disease 2019—COVID-NET, 14 States, March 1–30, 2020. Morb Mortal Wkly Rep. 2020;69(15):458.
4. Richardson S, Hirsch JS, Narasimhan M, et al. Presenting characteristics, comorbidities, and outcomes among 5700 patients hospitalized with COVID-19 in the New York City area. Jama. 2020;323(20):2052-2059.
5. Yang J, Zheng Y, Gou X, et al. Prevalence of comorbidities in the novel Wuhan coronavirus (COVID-19) infection: a systematic review and meta-analysis. Int J Infect Dis. 2020;10(10.1016).
6. Shah AD, Langenberg C, Rapsomaniki E, et al. Type 2 diabetes and incidence of cardiovascular diseases: a cohort study in 1• 9 million people. Lancet Diabetes Endocrinol. 2015;3(2):105-113.
7. George J, Mathur R, Shah AD, et al. Ethnicity and the first diagnosis of a wide range of cardiovascular diseases: Associations in a linked electronic health record cohort of 1 million patients. PloS One. 2017;12(6):e0178945.
8. Demaio A, Jamieson J, Horn R, et al. Non-communicable diseases in emergencies: a call to action. PLoS Curr. 2013;5.
9. Banerjee A, Drumright LN, Mitchell AR. Can the NHS be a learning healthcare system in the age of digital technology?. BMJ Evid