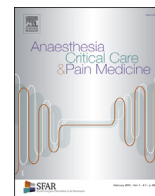




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Editorial

Compounded research challenges amid the COVID-19 pandemic



Ever since December 2019, more and more countries have become victims of the COVID-19 pandemic, entailing a major burden on healthcare infrastructures and crippling economies all over the world [1]. These unprecedented global times have prompted the scientific community to collaborate as a cohesive unit in yielding quality evidence aligned with the highest-priority societal goal of mitigating the morbidity and mortality associated with the novel severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2).

Despite the concerted endeavours of the scientific powerhouse, the real-time research challenges have considerably intensified amid the pandemic, particularly when the contributions of the scientific fraternity are under a perpetual microscopic scanner given the immensely broadened readership, in view of the understandably high hopes worldwide. With a colossal magnitude of COVID-related research being published, it becomes increasingly difficult to discern the “signals” from the “noise”, necessitating a continuous reflection upon the relevance, reliability, reproducibility and robustness of the same. The “pendulum-swings” as a result of the premature acceptance of attributes like treatment-efficacy or contraindication, can have potential consequences. To name a few, the dramatic escalation of the hydroxychloroquine requirement in the pandemic times raises possible concerns of shortages for the cohort receiving medication for the U.S. Food and Drug Administration (FDA) approved indications, exemplifying the aforementioned fact [2,3]. Similarly, the threats surrounding the use of ibuprofen in COVID-19 limited the availability of acetaminophen for patients with a well-known contraindication to ibuprofen [3].

Nevertheless, the research community is not new to such examples (premature embracement of recombinant human activated protein-C, etc.) with these previous experiences only highlighting the need of maintaining a high quality standard of evidence for moving practice forward [4–6]. In this context, the FDA has recently outlined a regulatory document of guidance on the conduct of clinical trials related to the public health emergency of COVID-19 [7]. In addition to pragmatic guidelines dictating our research efforts backed by a meticulous peer-review, we researchers are also obligated to adhere to the principles of scientific integrity aiming at the most accurate and objective representation of the study results, despite a condensed time frame in a pandemic situation [8,9].

The concept of scientific-integrity is much more holistic (compared to scientific-misconduct encompassing the fraudulent publication practices, at large) and focuses closely on a firm

adherence to the epistemic values in the way a scientist evaluates, discusses and accepts the research results. As an extension of the same, research-related accountability is pivotal while science serves society, wherein a sound comprehension of the scientific research can be augmented by ensuring an enhanced transparency (an improved research-representation quality by sharing methodological intricacies, protocols, patient-registries, appropriate regulatory approval, funding details, data-analysis script, etc.), vetting the involved experimental designs and techniques to minimise the associated biases, which could compound the study representation and interpretation alike [8,9].

Moreover, a second major concern emanates from the “viral” spread of misinformation (misleading information, a major plague to the scientific community and public health), which tends to transpire in a much greater extent during times of disaster, considering the humans’ natural tendency to discover resolution in absence of its true existence [2,10]. Given the demanding situation, the healthcare fraternity can also be reasonably vulnerable wherein the intrinsic zeal to contribute may potentially blur the spectacle of critical appraisal. However, intentions kept aside, the contagion-effect of the misinformation phenomenon (the concurrent “infodemic”, in its own peculiar ways) presents the biggest peril to the ongoing COVID-19 fight [10–12], as the popular adage most aptly puts it: “*a lie can travel halfway around the world while the truth is still putting on its shoes*”. The observations of Joshi et al. highlighting the gaps in the quality of COVID-19 health information on the most trending search engines bear testimony to the above mentioned [13]. In addition, Rovetta and Bhagavathula, in their analysis of Google searches and Instagram hashtags pertaining to COVID-19, reveal that myriad infodemic monikers circulate propagating information that potentially classifies as fake news or misinterpretation, all coming within the purview of misleading information [14].

Appropriate to the above mentioned context, Merchant and Asch delineate the remedial measures to safeguard the value of science in the social media age of “liking” and “retweeting” [15]. Their exemplary tenets can contribute to combat the menace of misinformation in times of the pandemic. Identifying the potential sources of misinformation at the level of social media blogs, news reports and other mass media regulators, the scientific community needs to engage at these sources (in the form of commentaries, interviews, expedited reviews and joint author-journal posts, vetting the dissemination of information) to augment the resultant control on the derived narratives (alongside

the preservation of veracity) and to execute every possible opportunity to curtail the dissemination of the infodemic monikers, which tend to accelerate misinformation in one or the other form [14,15].

To conclude, the research fraternity discovers itself under the spotlight, much more than ever before. While every part of the community has their own lessons to learn from the pandemic, the peculiar research-related challenges have intensified as we navigate through this epic pandemic, which presents unique opportunities to learn long-term lessons in the subject of tenuously balancing the “hope” and the “hype” paralleled with the aim of strengthening the integrity of and the confidence in the medical research enterprise.

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None.

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Rohan Magoon^{a,*}, Ruchi Ohri^b

^aDepartment of Cardiac Anaesthesia, Atal Bihari Vajpayee Institute of Medical Sciences (ABVIMS) and Dr. Ram Manohar Lohia Hospital, Baba Kharak Singh Marg, New Delhi 110001, India

^bDepartment of Anaesthesia, Atal Bihari Vajpayee Institute of Medical Sciences (ABVIMS) and Dr. Ram Manohar Lohia Hospital, Baba Kharak Singh Marg, New Delhi 110001, India

*Corresponding author

E-mail address: rohanmagoon21@gmail.com (R. Magoon)

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