

COVID-19 and the Generation of Novel Scientific Knowledge in a Dangerous Time.

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Abstract

Rationale, Aims and Objectives: One of the sectors challenged by the COVID-19 pandemic is medical research. COVID-19 originates from a novel coronavirus (SARS-CoV-2) and the scientific community is faced with the daunting task of creating a novel model for this pandemic or, in other words, creating novel science. This paper aims to explore the intricate relationship between the different challenges that have hindered biomedical research and the generation of scientific knowledge during the COVID-19 pandemic. **Methods:** During the early stages of the pandemic, research conducted on hydroxychloroquine (HCQ) was chaotic and sparked several heated debates with respect to the scientific methods used and the quality of knowledge generated. Research on HCQ is used as a case study in this paper. The authors explored biomedical databases, peer-reviewed journals, pre-print servers and media articles to identify relevant literature on HCQ and COVID-19, and examined philosophical perspectives on medical research in the context of this pandemic and previous global health challenges. **Results:** This paper demonstrates that a lack of prioritization among research questions and therapeutics was responsible for the duplication of clinical trials and the dispersion of precious resources. Study designs, aimed at minimizing biases and increasing objectivity, were, instead, the subject of fruitless oppositions. These two issues combined resulted in the generation of fleeting and inconsistent evidence that complicated the development of public health guidelines. The reporting of scientific findings highlighted the difficulty of finding a balance between accuracy and speed. **Conclusions:** The COVID-19 pandemic presented challenges in terms of (1) finding and prioritizing relevant research questions, (2) choosing study designs that are appropriate for a time of emergency, (3) evaluating evidence for the purpose of making evidence-based decisions and (4) sharing scientific findings with the rest of the scientific community. This paper demonstrates that these challenges have often compounded each other.

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