Social media and COVID-19 – perceptions and public deceptions regarding colchicine, hydroxychloroquine and ivermectin and resultant lessons for future pandemics

Natalie Schellack[1], Morné Strydom[1], Michael S Pepper[2], Candice L Herd[2], Candice Laverne Hendricks[2], Elmien Bronkhorst[3], Johanna C Meyer[3], Neelaveni Padayachee[4], Varsha Bangalee[5], Ilse Truter[6], Andrea Antonio Ellero[1], Thulisa Myaka[1], Elysha Naidoo[1], Brian Godman[3,7,8]

[1]Department of Pharmacology, Faculty of Health Sciences, University of Pretoria, Pretoria, South Africa. Email: natalie.schellack@up.ac.za; morne.strydom@up.ac.za; u17079421@tuks.co.za; u17083932@tuks.co.za; andrea.ellero@up.ac.za
[2]Institute for Cellular and Molecular Medicine, Department of Immunology, and SAMRC Extramural Unit for Stem Cell Research and Therapy, Faculty of Health Sciences, University of Pretoria, Pretoria, South Africa. Email: michael.pepper@up.ac.za; CLHerd@tuks.co.za; Candice_Hendricks@outlook.com
[3]School of Pharmacy, Sefako Makgatho Health Sciences University, Pretoria, South Africa. Email: elmien.bronkhorst@smu.ac.za; hannelie.meyer@smu.ac.za; brian.godman@smu.ac.za
[4] Department of Pharmacy and Pharmacology, Faculty of Health Sciences, School of Therapeutic Sciences, University of Witwatersrand, Johannesburg, South Africa. Email: Neelaveni.Padayachee@wits.ac.za
[5] Discipline of Pharmaceutical Sciences, College of Health Sciences, University of KwaZulu-Natal, Durban, South Africa. Email: bangalee@ukzn.ac.za
[6] Drug Utilization Research Unit (DURU), Department of Pharmacy, Nelson Mandela University, Port Elizabeth, South Africa. Email: ilse.truter@mandela.ac.za
[7] Centre for Neuroendocrinology (CNE), Department of Immunology, University of Pretoria, Pretoria, South Africa. andrea.ellero@up.ac.za
[8] Strathclyde Institute of Pharmacy and Biomedical Sciences, University of Strathclyde, Glasgow G4 0RE, United Kingdom. Email: Brian.Godman@strath.ac.uk
[9]Centre of Medical and Bio-allied Health Sciences Research, Ajman University, United Arab Emirates

Abstract

Background: The capacity for social media to influence the consumption of re-purposed medicines to manage COVID-19 despite limited safety and efficacy data at the start of the pandemic is cause for concern. **Objective**: To ascertain links between social media reports and utilization for three re-purposed medicines (hydroxychloroquine (HCQ), ivermectin and colchicine) to direct future activities. **Methods**: A combined retrospective analysis of social media posts for these re-purposed medicines was performed in South Africa between January and June 2021 together with utilization and clinical trials data. Utilisation data from IQVIA from three different platforms included private and public markets. Clinical trials data was obtained from various databases. Chloroquine data was analysed in South Africa (HCQ was not available). **Results**: 77257 posts were collected across key social media platforms during the study period of which 6884 were relevant. Ivermectin had the highest number of posts (55%) followed by HCQ (44%), with limited posts for colchicine (1%). The spike in ivermectin utilisation was closely correlated with social media posts. Similarly, with chloroquine social media interest was enhanced by comments from local politicians. Sentiment analysis showed that the posts regarding the effectiveness of particularly ivermectin and HCQ were positive. Of concern is that the origin of the majority of reporters in social media (85%) was unidentifiable. **Conclusion**: This is the first study of its kind in South Africa providing evidence that social media is a driver of re-purposed medicine use. Healthcare professionals have a key role to provide evidence-based advice especially with unidentifiable posts.

Keywords: Social-media; re-purposed medicines; hydroxychloroquine; ivermectin; colchicine; South Africa; sentiment analysis; utilization; clinical trials

Conflict of interests

The authors declare they have no relevant conflicts of interest