

## COVID-19 and potential aggravation of antimicrobial resistance in Pakistan

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Madam, the ongoing Coronavirus disease 2019 (COVID-19) pandemic has affected a sizable portion of the global population, with over 410 million cases reported globally as of January 15, 2022.<sup>1</sup> Pakistan has had its fair share of these cases, with over 1.4 million people testing positive for COVID as of the date mentioned above.<sup>1</sup> Antiviral drugs (remdesivir with or without baricitinib), steroids (dexamethasone), immunosuppressants (tocilizumab), monoclonal antibodies (casirivimab and imdevimab), and convalescent plasma have all been used to treat infected people.<sup>2</sup> Although antibiotics are not recommended for viral infections, they have been overprescribed in COVID patients.<sup>2</sup>

Pakistan is the world's third-largest consumer of antibiotics among lower-middle income countries.<sup>3</sup> With antimicrobial resistance (AMR) already looming as a national concern<sup>4</sup> and a history of the emergence of multiple antibiotic-resistant bugs.<sup>5</sup> One can safely assume that the use of antibiotics has likely escalated amidst the incessant COVID-19 pandemic in Pakistan. A study revealed non-evidence-based antimicrobials among patients with the COVID-19 admitted into Pakistani hospitals, prescription of antibiotics without established bacterial co-infections and an increased consumption of antibiotics such as azithromycin and ciprofloxacin in COVID patients.<sup>6</sup> This lends credence to our previously stated assumption.

The alarming upsurge in the prescription of antibiotics since the advent of the COVID-19 pandemic is bound to exacerbate the already rampant AMR in Pakistan and rest of the world alike. Several factors contribute to this predicament, including delays in diagnosis, inappropriate drug regimens, poor follow-up, lack of social support for high risk populations and now, due to COVID-19 pandemic, disruption in healthcare services, drug shortages, widespread use of biocides, misuse of

antibiotics and surge in misinformation.<sup>4</sup>

It is estimated that drug resistant infections kill more than 700,000 people worldwide each year, which is likely to rise if the threat is not addressed.<sup>4</sup> Low- and middle-income countries (LMICs) like Pakistan are likely to suffer the worst consequences of AMR. In light of the potential aggravation of AMR stemming from antibiotic overuse in COVID patients, it is critical for regulating authorities to ensure that antimicrobial stewardship measures are followed when prescribing antibiotics and that non-evidence-based use is avoided. Since AMR is here to stay, the best thing that can be done in this pandemic is to prevent another bug from joining the notorious family of drug-resistant microorganisms.

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