Plasma therapy is no silver bullet

To recommend it without undertaking a robust scientific study may cause more harm than good

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The COVID-19 pandemic has posed unprecedented challenges to governments, health professionals and the general public at large, around the world. Every response, administrative, social, economic or medical is being subjected to intense public scrutiny, as it rightly should be in the spirit of mature democracy.

Scientific research in medicine is the only means to overcome novel and complex diseases such as COVID-19 and that too thrives on the same spirit of debate and criticism. The difference, however, is that the standards of evidence required, to generate consensus and arrive at the most optimal protocols, are far more rigorous and time-taking than in most other walks of life.

So is the case with the convalescent plasma therapy, that is being currently studied by the Indian Council of Medical Research, through open label, randomised controlled trial to evaluate it for both safety and efficacy. Already, four patients have been enrolled in Ahmedabad and the study will be rolled out in 20 hospitals by the end of this week and at more centres over the next month.

The therapy involves infusing patients suffering from COVID-19 with plasma from recovered patients. In theory, the antibodies of the recovered person may help that patient's immune system fight the virus. While showing great promise, it is a line of treatment that is yet to be validated for efficacy and safety and cannot be deployed widely without caution. The current evidence to conclude anything about the true benefits of this therapy is very thin.

Need for more research

The most important principle in medical ethics is “do no harm”. The transfusion of convalescent plasma is also not without risks, which range from mild reactions like fever, itching, to life-threatening allergic reactions and lung injury. To recommend a therapy without studying it thoroughly with robust scientific methods may cause more harm than good.

Till date, there have been only three published case series for convalescent plasma in COVID-19 with a cumulative of 19 patients. Given the very small number of patients involved in these studies and a publication bias in medicine, we cannot conclude the therapy will work on all patients all the time or even believe that the convalescent plasma was the only reason for their improvement.

To say with certainty whether a drug is truly effective or not, the gold standard in medicine is to conduct a randomised controlled trial, where half the patients get the experimental drug and the other half do not. Only if patients in the first half show substantial improvement over those in the second half, it indicates the drug is beneficial.

Further, convalescent plasma therapy requires intensive resources, healthy COVID-19 survivors to donate, a blood bank with proper machinery and trained personnel to remove plasma, equipment to store it and testing facilities to make sure it has an adequate amount of antibodies. Too much focus on one approach can take away the focus from other important therapeutic modalities like use of oxygen therapy, antivirals, and antibiotics for complicated hospital courses. To overcome the pandemic comprehensively, we should focus on strengthening health systems at all levels, including referral systems, supply chain, logistics and inventory management. We need to work on protecting our healthcare workers, improving prevention methods, promoting cough etiquettes, effective quarantining and accurate testing.

Even these times of collective uncertainty are no reason to lower scientific temper. While it is good to be hopeful, the fact remains there are no real silver bullets in medicine and health outcomes are a result of not just a few pills or therapies but a complex set of factors. Science should be driven by reason and evidence with hope as a catalyst but not by either fear or populism. Pushing one or the other therapy without evidence or caution can only set back our larger fight against COVID-19.

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