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Editorial

Utilising Severity of Adverse Events Following COVID19 Vaccination as a Predictive Test for hypersensitivity to Future break through SARS-COV Infections

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INTRODUCTION

Human infection with severe acute respiratory syndrome coronavirus type 2 (SARS-CoV-2) and its issuing disease process (coronavirus disease 2019 or simply COVID-19) expose the diverse idiosyncrasy inherent in human immunological response to exogenous antigens.

The ability to predict who is hypersensitive to which antigen, is used by immunologists as a test for hypersensitivity to that antigen. As a result, several blood and skin based tests have emerged to diagnose who is at risk of hypersensitivity, and more relevant, to which natural antigen they are primes to over-react.

The extent of COVID-19 pathology manifest in individuals is a spectrum, with some manifesting mild to moderate disease, while others get severe disease with critical outcomes. Despite the advances in high through put technologies for deciphering innate idiosyncrasy in disease processes, only few studies have elucidated phenotypic markers for severity. Being male, and having genetic different in B cell and Interleukin profiles, have been suggested but none seems reachable as an easy to use biomarker for predicting severe COVID-19 outcomes.

The advent of COVID-19 vaccines and vaccination offers us an opportunity to study how the severity of adverse events following vaccination correlate with disease outcomes in a natural setting. We postulate that, persons that experience severe adverse events of a definite nature, might suffer severe and critical illness in case of post-vaccination or break through infections. This phenomenon-unrelated to the Antibody Dependent Enhancement (ADE) seen with other coronaviruses might be explored to target Non-Pharmacological Interventions (NPIs) to those at risk of severe or critical COVID-19 outcomes.

Inferably, treating COVID-19 as a hypersensitivity reaction to an infectious 'allergen' could pave way for a more targeted investigation in what may be potentially beneficial therapeutics. From simple immune modularatory therapeutics used in allergy to the immuno-suppressive and abberative therapies exploited during transplant medicine. Induction of tolerance would become a major focus for future treatment severe COVID-19. Natural infections along or vaccination of, pregnant women would hypothetically result into a sustained chimeric state of tolerance in their unborn babies.

CONCLUSION

In conclusion, we could utilize a measure of severity of adverse events following COVID-19 vaccination as a predictive test for extent of hypersensitivity to future break through SARS-CoV-2 infections. That could pave way for targeted immune-tolerance therapy for severe acute COVID-19 illness.

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