

Precision Medicine in the 21st Century and the COVID-19 Era: Lessons Learned again from Thalidomide

Athar Khalil¹ and Georges Nemer^{1, 2*}

¹American University of Beirut, Lebanon

^{2*}Hamad Bin Khalifa University, Qatar.

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ABSTRACT

The rapid events in the COVID-19 pandemic crisis and the lack of a reliable medical communication body except for the World Health Organization (WHO) is allowing social media to take over by spreading tidal wave of misinformation. Suppressing the flow of such misleading information, especially in developing countries, is an essential step towards efficient global awareness measures and reliable data collection.

Drug repurposing for several known anti-inflammatory molecules has emerged as a rapid temporary solution and as a complementary tool for controlling the associated complications of COVID-19. Among these proposed immunomodulatory therapies is Thalidomide, an anti-inflammatory orphan drug that was presented in one case report study and was registered for two clinical trials that tackle COVID-19 complications. Following a flare in the social media that presented Thalidomide as the potential “magic” drug, we decided to explain its status from a scientific and medical perspective. We first portrayed the hypothetical potentials of Thalidomide in attenuating the exaggerated inflammatory response and the associated cytokine storm among COVID-19 patients. Then, we criticized the rapid decision of moving a teratogenic drug like Thalidomide based on minimal promising clinical evidences into a clinical setting.

At times of crisis, it is the ethical obligation of researchers to guide the potential treatment strategies based on solid scientific proofs. We should not use the excuse of “possible benefit that can outweigh the risk” to permit hasty medical decisions on any drug. On the other hand, in the post-genomic era, the focus should be directed more towards precision medicine. As such, identifying genetic risk factors for COVID-19 infection and characterizing the molecular events involved in the virus-host interaction would better fulfil this urgent call for action. Thus, we are currently involved in the COVID-19 host genetics initiative by sharing our Lebanese cohort characteristics and the resultant genetic data.

Keywords: Thalidomide, COVID-19, Cytokine storm, Genetic data

Corresponding author: Georges Nemer, Hamad Bin Khalifa University, Qatar, E-mail: gnemer@hbku.edu.qa

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