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Letter to the editor

An oncologist perspective on COVID 19: A mysterious cryptic virus



An uncharted journey with the Coronavirus has begun world over as the mundane rules of many of the common viruses have been wrecked by the coronavirus. The potential sauce for its disruption is the locomotion of individuals that propels the transmission of this immobile virus. The emergence, re-emergence and the advantageous mutations from the animal kingdom of this mysterious and cryptic virus is indeed an imperceptible foe to the humankind. There has been a rising infodemic and researchers who are yet to weather the storm are at their best in studying the trajectory of the virus and dissecting the information. The host inflammatory response and the cytokine storm-generated reflects its curious manifold attack on the lungs, heart and liver and kidney [1,2]. It is also prudent to understand the “patient zero” that would help in the containment of viruses and unfold some of the mysteries such as its high transmissibility. The increased infectivity of the virus and the viral shedding during the asymptomatic phase explains its high reproduction number and the need for social distancing. The dictum that the virus has specificity for a particular species and cell type has been overcome by the coronavirus known for its Spillover. To keep the virus at bay a noble vaccine that can kick-start the immune system is at its infancy. Also, the ever-changing and evolving virus can sometimes make vaccines obsolete and ineffective. A cocktail of medications from the drug pipeline including off-label drugs [3] has been shadow boxing due to the lack of vaccines that can hit this pandemic hard.

Head and neck cancers are commonly seen in elderly individuals and substance abusers. Tobacco use is the leading cause of COPD: an independent risk factor in severe COVID-19. Besides, Tobacco increases the gene expression of angiotensin-converting enzyme 2, the binding receptor for severe acute respiratory syndrome coronavirus 2 [4,5].

The immune system declines with age increasing the susceptibility of elderly individuals to viral infections. Production of innate interferons constitutes the most prompt and dominant innate immune response to counter viral infections. The decline in the Plasmacytoid dendritic cells in the elderly and a further decline in the frail elderly population with comorbidities depletes the immune envelop. Elderly individuals are unable to mount a stable immune response against all types of viral infections due to the decreased interferon production or its inhibition through viral non-structural protein 1 (NS1) which in turn increases the relentlessness of viral infection [6–8].

Given the pandemic and global lockdown COVID-19 patients are currently prioritized and there can be an increase in the risk of interruption in the drug supply chain. Lifesaving therapy for cancer in contrast to the life-threatening infectious COVID 19 has instilled a lot of agony amongst the cancer patients. An oncologist should forge a strategy to ensure a continuum of care considering the tumor doubling and increase in the total treatment time that can have an impact on the treatment outcome. Oncological screening for normal patients can be rescheduled because of the contagion nature of the virus. The risk of COVID19 in cancer patients is yet to be ascertained however the

severity of the disease may be higher as Cancer and its treatment knocks down the immune system. Head and neck surgeries harbor a high viral load, have a high risk of exposure and infection from aerosol and droplet contamination. Patients under palliative care or in case of emergency: airway obstruction cannot be denied of treatment or can be postponed. The patient’s medical need who are in the different phases of cancer treatment and the logistical competence of the individual hospital to meet those needs in real-time should be assessed on a case to case basis.

Oncologists have to get prepared for a new routine and protect themselves and their patients.

*The American college of surgeons advocates that surgeons look at the Elective Surgery Acuity Scale (ESAS) and triage the patients accordingly [9].

*The highly skilled and limited health workforce work in a vulnerable environment and hence should be shielded physically with the personal protective equipment, financially and mentally during this unprecedented crisis.

*Postponement of appointments for patients with benign disease (salivary gland tumors, thyroid disorders, etc.) and telecommuting for patients who are under routine surveillance post-surgery.

*Tracheostomy should be done with utmost diligence with ample sedation and muscle relaxants to avoid the risk of coughing and preferably a percutaneous dilatational tracheostomy should be considered.

*Prophylactic growth factors and antibiotics during chemotherapy [10] to diminish the risk of potential neutropenic fever and regular monitoring of the blood counts to avoid the need to visit emergency care.

*Prioritise newly diagnosed malignant cases and close surveillance of follow up and palliative care patients using telemedicine. A switch over to metronomic chemotherapy can also be considered during the acute phase of the pandemic to halt tumor growth.

*Revamp the immune system by cyclic meditation and deep breathing exercises.

A word of caution, concern and preventive measures would be a more fruitful and appropriate response to the virus than a panic state that can paralyze the health care system and derange the economy and social fabric of the community.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

References

- [1] Wu D, Yang XO. TH17 Responses in Cytokine Storm of COVID- 19: An Emerging Target of JAK2 Inhibitor Fedratinib. *J Microbiol Immunol Infect* 2020 Mar;11.

- [2] Wu Z, McGoogan JM. Characteristics of and important lessons from the coronavirus disease 2019 (COVID-19) outbreak in China: summary of a report of 72 314 cases from the Chinese Center for Disease Control and Prevention. *Jama*. 2020 Feb 24.
- [3] Cortegiani A, Ingoglia G, Ippolito M, Giarratano A, Einav S. A systematic review on the efficacy and safety of chloroquine for the treatment of COVID-19. *J Crit Care* 2020 Mar 10.
- [4] Cai G. Bulk and Single-Cell Transcriptomics Identify Tobacco-Use Disparity in Lung Gene Expression of ACE2, the Receptor of 2019-nCoV. Preprints. 2020; 2020020051. <http://doi.org/10.20944/preprints202002.0051.v2>. External Resources Crossref (DOI).
- [5] Guan WJ, Ni ZY, Hu Y, Liang WH, Ou CQ, He JX, et al. Clinical characteristics of 2019 novel coronavirus infection in China. *MedRxiv*. 2020 Jan 1.
- [6] Agrawal A, Agrawal S, Cao JN, Su H, Osann K, Gupta S. Altered innate immune functioning of dendritic cells in elderly humans: a role of phosphoinositide 3-kinase-signaling pathway. *J Immunol* 2007;178:6912–22.
- [7] Sridharan A, Esposito M, Kaushal K, Tay J, Osann K, Agrawal S, et al. Age-associated impaired plasmacytoid dendritic cell functions lead to decreased CD4 and CD8 T cell immunity. *Age (Dordr)* 2011;33:363–76.
- [8] Canaday DH, Amponsah NA, Jones L, Tisch DJ, Hornick TR, Ramachandra L. Influenza-induced production of interferon-alpha is defective in geriatric individuals. *J. Clin. Immunol* 2010;30(3):373–83.
- [9] Givi B, Schiff BA, Chinn SB, Clayburgh D, Iyer NG, Jalisi S, et al. Safety Recommendations for Evaluation and Surgery of the Head and Neck During the COVID-19 Pandemic. *JAMA Otolaryngol-Head Neck Surg* 2020 Mar;29.
- [10] Aagaard T, Roen A, Reekie J, Daugaard G, Brown PD, Specht L, et al. Development and validation of a risk score for febrile neutropenia after chemotherapy in patients with cancer: the FENCE score. *JNCI Cancer Spectrum* 2018 Oct;2(4):pky053.

Sameep S. Shetty^{a,*,1}, Vishal Rao^b, Akshay Kudpaje^c, Surya Mithra^d,
Yash Merchant^b, Nikita Shabadi^e

^a Manipal College of Dental Sciences, Mangalore 575001, India

^b Dept of Head and Neck Oncology, Health Care Global Enterprises Ltd,
Bangalore, India

^c Health Care Global Enterprises Ltd, Bangalore, India

^d Mamata Academy of Medical Sciences, Hyderabad, India

^e Coorg Institute of Dental Sciences, Virajpet 571218, India

E-mail addresses: sameep.shetty@manipal.edu (S.S. Shetty),
drvishal.rao@hcgel.com (V. Rao),
drakshay.shivappa@hcgel.com (A. Kudpaje).

* Corresponding author.

¹ Light house Hill Road Manipal academy of higher education. A constituent of MAHE.