



Resurgence of COVID-19 virus in India

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Abstract

The damage by covid to human life had been unprecedented. It took away many aspects of our being. It changed the world order by pitching friendly nations against each other. On the other hand, it provided us with new heroes, new tales of chivalry and various spectrum of humanity. While families came closer by isolating, cooking and eating together, they also faced economic hardships as people lost their jobs. Less physical visibility and more online presence led to enhanced digital intelligence and any information about covid was immediately lapped up. Information dissemination was easier as most of the peer reviewed journals became open access. Scientists working overtime and governments adopting desperate measures to control mortality made a complete story from the start to the development of a pandemic and probably ending in its control.

This narrative was totally won over by science by understanding definitive modalities of treatment and development of precise vaccines. The covid story may

have following seasons too, as covid is again making a comeback, and the resurgence in different pockets of the world is something we cannot overlook. What worries us is: would it gain same notoriety as earlier and would vaccines be able to keep up with the changing variants in the coming days?

Keywords: Covid19, pandemic, RNA virus, who, variants, vaccine.

Introduction

Discovered accidentally after a series of pneumonia cases appeared in Wuhan in China in December 2019, it quickly spread as a very lethal illness to engulf the whole world. The causative virus was isolated and characterized in January 2020 [1]. The international committee on taxonomy of viruses named it as severe acute respiratory syndrome coronavirus 2 (sars-cov-2) [2]. Soon who recognized the spread as a pandemic and public health measures were put in place all over the world [3]. Globally the media was agog with the information on the new pandemic, false information

along with truth was floating everywhere. Psychosis of every individual was affected by impending fear of death. What got the families together with the understanding that only aged people and people with comorbidities were dying in the first wave was also lost when second wave struck. The second wave took away the unvaccinated and also many healthy people. Cities being under lockdown, cancellation of sports events, socio-economic upheaval, mass casualties, all left people scrambling for basic necessities and hoarding of supplies at home [4]. Even hoarding of oxygen cylinders by families during second wave was noted. The immense monstrosity of the second wave with the unavailability of hospital beds and dwindling of life support infrastructure made everything seem hopeless. The herd immunity of previous covid infections and the immunity provided by the vaccines is now waning, this has got everyone puzzled about the resurgence of the new variant xbb1.16 [5]. Clinically with an incubation period of 5-7 days, the illness ranged approximately to 10 days. Covid is a multi-system disorder involving respiratory system, central nervous system, cardiovascular system, gastrointestinal system, renal system, musculoskeletal system and skin adnexa [6-9]. Like acute covid, long covid is also a multi system disease, with symptoms, occurring for over a year. Individually or in combination.

These symptoms of long covid are thought to be due to persistence of low levels of inflammatory markers in the body [10,11]. It is the fifth pandemic to have occurred after the 1918 flu pandemic, causing 6,889,743 deaths till date [12]. The switchover from pandemic to endemicity occurred mainly due to very effective vaccines and the efforts by various governments in facilitating optimum vaccine coverage. Covid disease is

caused due to a single stranded rna virus, bats being the natural reservoirs, initially there may have been an intermediate host between bats and humans causing this transmission [13]. It is a highly infectious and contagious virus constantly spreading and mutating in human population [14]. A variant is formed when a virus replicates inside a host, during replication mutations tend to occur, this mutated virus is then called a variant [15]. Variants usually do not affect how a virus works. Although, sometimes they make it act in different ways [16]. They affect the infectivity and severity of the virus, evasion of immunity and diagnostic testing [17]. The variants having potential impacts are called 'variants of interest' and variants with demonstrable impacts are called 'variants of concern' on disease transmission and human health [18]. Then there are 'variants of high consequence' for which current vaccines do not offer protection. No sars-cov-2 variants currently fall under this category and further on there are 'variants under monitoring' [19]. The current new variant xbb1.16, a latest sub-lineage of omicron is assigned to variants under monitoring list on 22nd march 2022 [20]. As per Indian sars-cov-2 genomic consortia the predominant strain at present in India is xbb variant [21]. In this study we have used information from multiple sources e.g., PubMed, Scopus, google search, centers for disease control and prevention, ministry of health and family welfare website and who website.

Discussion

Covid 19 took the world by storm, where globally countries were following covid appropriate behavior, their governments were also struggling for basic medical supplies. The world also witnessed the scientific rush to develop the vaccines against this deadly disease. The situation of all countries coming together to ward

off the fury that covid raged in few months was un believable. What could halt covid and make it endemic is still a dilemma; whether the vaccines could finally rein in the virus, or maybe the individual genome was protective, perhaps the herd immunity got the better of it, or was it the lockdowns? It could also be that the lethal variants simply had a certain half-life in the process of evolution. Parasite evolution refers to the heritable genetic changes that a parasite accumulates during its lifetime, which can arise from adaptations in response to environmental changes or the immune response of the host [21]. A parasite would not want to kill its host, rather a host producing a large number of parasite progeny, infecting and multiplying in numbers would be conducive to its propagation. The first wave in India started in March 2020, achieved a peak in September 2020 with more than 90,000 confirmed cases /day, and gradually decreased in intensity with 10,000 confirmed cases/day in February 2021. Among RT-PCR confirmed cases, older age, male sex, and history of various comorbidities were associated with increased risk of mortality [22]. Lineage analysis in India showed the predominance of alpha variant in the first wave (B.1.1.7). There was emergence of new SARS-cov-2 variants i.e., Kappa (B.1.617.1) and Delta (B.1.617.2) during April-May 2021, believed to cause sudden upsurge in the cases up-to 400,000 confirmed cases/day in the second wave [21,22]. Patients admitted during the second wave of covid had significantly higher ICU and hospital mortality. The age range in both the waves was similar, but the proportion of women increased in the second wave. Patients in the second wave had more comorbidities, as compared to those afflicted during the first wave. Increasing HRCT (high resolution CT scan of the lungs) score, duration from symptoms to hospital

admission was lower during the second wave. Similarly, the total leucocyte count was lower, but the need for any type of ventilatory support and intubation was higher in the patients admitted during the second wave. More patients received steroids during the second wave of covid. [23]. An antibody screening study from Bavaria, Germany suggested that more children were exposed in the second wave as compared to the first [23,24,25]. Could be due to more school opening, different seasons, different variants. The current resurgence of covid, much after the second wave, is due to xbb1.16, an omicron sub-variant. It is less severe but highly transmissible; the new virus causes headaches, bodily soreness, sore throat, abdominal discomfort and fever [26]. Dr maria von kerkhove an infectious disease specialist and who's covid 19 technical lead says that "this variant is the one to watch, one of the big uncertainties is that the virus hasn't settled into a predictable pattern- it continues to evolve" [27]. The severity and transmissibility of the covid-19 virus was lower during the first wave as compared to the second wave [27]. As per ministry of health and family welfare, India at present has 31,194 active cases and rising and recording approximately 6,000 new covid cases for second straight day. The recovery rate stands at 98.74%, death rate stands at 1.19% [28]. As per ministry of health and family welfare covid tracking, death rate in Previous 2 waves were higher [29]. Covid vaccination certificate is a highly recommended vaccination certificate for domestic and international travels [30]. And it is not without a reason. Covid has caused one of the biggest miseries in recent times on this planet, controlling its lethality on the way, embarking from a virulent to an almost symbiotic relationship in its struggle for existence, yet not there [31]. The origin of coronavirus is mired in controversy,

there is no evidence sars-cov-2 existed in any laboratory prior to the pandemic [32,33]. An original animal reservoir has not yet been confirmed,[34], though various plausible species have been identified [35-38]. This natural zoonosis had caused significant human distress. When covid virus first started its tumultuous journey in this human world, it was unaware that its ability to cause such mass destruction as the first wave, might cause it to compromise on its survival. Its capabilities relied on surviving on multitude of host factors like genomic structure, age, gender, and many comorbidities and external environment. Many died while fighting the illness, and in turn, increasing the death rate. When the investigations to detect an infection is reliable, easy, fast and available, it wins the war medically. The tests required to detect covid 19 i.e., rapid antigen test appearing in few minutes and RTPCR within few hours to 2 days could start the treatment early and definitively. This ensured a better outcome. The humanity fought for itself by experimenting with multiple drugs, plasma therapy, steroids, antiviral agents and the best of all, mass vaccination against it. Then the virus hibernated for a while, during this time upping its ante by mutating in its quest for survival. This mutation which caused a deadlier second wave was farther than the first wave in adapting the virus to its environment. The struggle of the virus continued and it quietened again to change its form to another softer version of itself 'the Omicron' variant. This variant showed less fatality, greater transmissibility and was less symptomatic thus causing lower rate of treatment seeking behavior and poor vaccination compliance. And this is not all, researchers have found for the first time that Covid infection has crossed the placenta and caused brain damage in two newborns, according to a study

published in 'Paediatrics' [39]. Sometimes one is left marvelling at the intelligence of such primitive beings in ensuring their survival. The virus shows its potential that in one or two mutations later, it would reach its goal in forming a perfect commensal relationship with its human host.

Conclusion

In future Covid 19 would cease to be an ominous illness. Maybe after subsequent one or two mutations it would be an acceptable viral myalgia, accompanied by slight cough and cold not requiring any medications or any covid protocols to be followed.

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