Journal of Medical Case Reports and Reviews

Received 18 Apr 2021 | Revised 23 Apr 2021 | Accepted 22 Jun 2021 | Published Online 26 Jun 2021

JMCRR 04 (06), 916-920 (2021) ISSN (O) 2589-8655 | (P) 2589-8647

JMCRR

COVID INFECTION DURING THE SECOND PANDEMIC WAVE: PHYSICIAN INSIGHTS AND LEARNINGS FROM A FAMILY CASE STUDY

Dr Varsha Narayanan

Consultant Family Medicine and Holistic Health, Dr Varsha's Health Solutions, Andheri West, Mumbai.

https://doi.org/10.52845/JMCRR/2021/4-6-1

Article Info

***Corresponding Author:**

Dr Varsha Narayanan

Abstract

The COVID pandemic has made a more rigorous comeback in 2021 with severely impactful second waves in many countries especially India. In contrast to the previous year, in the second wave the younger population and entire families have been affected at a given time. Medical management by the family physician involves not only individual treatment and monitoring, but also guiding the family as a whole on many related aspects. COVID family care is one of the cornerstones of the pandemic, and can present with unique challenges, differential symptomatology and clinical course, and multifaceted problems to the physician. Apart from treating the disease itself, the physician's expanded role also involves advising the family on holistic health and well-being, isolation and household hygiene, available support services, along with stress management and psychological counseling. Sharing of insights and learnings from such situations can add value towards a more effective approach to COVID family care.

Key words: Family physician, COVID family care, Second wave, Isolation, Holistic Healthcare.

Introduction:

Coronavirus disease (COVID-19) has been present in India since February 2020. The first wave showed a decline towards the latter part of 2020, with vaccination initiated in early 2021. However, the country was seized by an unexpected, much faster spreading COVID second wave from mid-March 2021, with daily new cases touching 2-3 lakhs per day in the months of April-May 2021. This massive case load led to an acute shortage and overwhelming of hospital and diagnostic resources.[1] This devastating second wave is attributed largely to the highly transmissible viral variants which include the recently designated Delta variant (B.1.617.2) which originated in Maharashtra and is present in large parts of India, and the Alpha variant (B.1.1.7 originated in UK) seen in parts of northern India.[2] The fast spread of the second wave may have been facilitated by the premature opening up of public places and general disregard for COVID appropriate behaviour, while vaccination had not covered most of the population.[3]

There were significant differences between the first and second wave in presentation, with the latter affecting the younger population more, mainly the working and bread earning group, previously unexposed, and not or incompletely vaccinated.[1] Around 85-90% infections were mild and manageable

at home with virtual health care and telemedicine support.[4] However even the 10-15% requiring hospital care constituted a huge actual number given the scale of the second wave. In addition to typical symptoms of fever, cough, sore throat, body ache and loss of smell/taste, atypical symptoms like digestive complaints, headache, and weakness/fatigue, were also common presenting complaints.[5] The hallmark of the second wave was that it affected the entire family in most cases, making treatment and homecare management of COVID for the physician a challenging combination of comprehensive family care as well as individual monitoring of the clinical course of each member. Presented here is a family treatment experience which can impart useful insights and learnings for physicians, administrators and social workers.

Case Study:

The family discussed here which serves as a prototype, has 4 members: husband aged 49 years, wife aged 43 years with a daughter aged 18 years and son aged 11 years. The husband presented first with fever of 100 deg F, dry cough and sore throat. Due to history of work and travel in the preceding week and possible exposure during the ongoing pandemic second wave, he was immediately isolated in one of the 2 bedrooms in their apartment, and advised COVID RT-PCR test. Patient had no associated comorbidities. He was started on ivermectin (as per protocol by ICMR, India)[6], symptomatic treatment with paracetamol for fever, antiallergics for dry cough, antiseptic gargles for sore throat, along with vitamin supplements (B-complex, C and D) and an antacid, on day 2 of symptom onset (the same day testing swab was taken). He was monitored virtually for 6 hourly temperature and oxygen saturation. He was advised conscious proning twice daily, simple breathing exercises, and 6-minute walk test once daily. The RT-PCR report was received 48 hours later (day 4) which came out positive. By this time, he had also significantly lost smell and taste. On day 4 fever had increased to 101 deg F with persistent cough which made the patient very anxious, so he was also started on favipiravir for 7 days.

The day after receipt of the husband's RT-PCR, the wife developed fever (100.5 deg F) and body ache. Her RT-PCR sample was sent immediately along with those of the son and daughter, who were both asymptomatic. The wife also had no associated comorbidities and was started on ivermectin, paracetamol and vitamin supplements, with temperature and oxygen saturation monitoring. Her report was received after 48 hours which was positive. However, the reports of both son and daughter were negative. The parents asked if the children could be sent away to a friend's house, but this was advised against medically. The wife was isolated in the second bedroom, and they were all told to be double masked when in the common areas of the house. A home cooked food delivery service was also recommended to enable better rest for the wife and avoidance of using common kitchen.

2 days later (day 9 of husband's and day 5 of wife's illness), the 11-year-old son developed fever (100.5 deg F) and cough. He was started on cough syrup and paracetamol along with oxygen and temperature monitoring (done by the mother). At this time the husband's fever was still at 100-101 deg F, yellowish mucus was being brought out in cough, and sore throat was persistent with pain on swallowing. The oxygen saturation though mostly maintained above 94% showed a dip to 92-93% on day 7-9 post 6-minute walk test with improvement on proning. Blood tests done on day 7 revealed an expected markedly increased CRP to >5 times upper limit of normal, and high neutrophil-lymphocyte ratio (NLR>3.5). Patient was given a 5-day course of oral antibiotic (azithromycin 500mg) and corticosteroid (methylprednisolone 16 mg/day) from day 8-12. By day 12, his temperature was normal, cough and sore throat markedly reduced, and oxygen saturation did not show further dips. The wife's oxygen saturation was maintained at all times >95%, with absence of fever by day 8 so no further treatment was added. The son became asymptomatic in 72 hours.

The daughter who had tested negative and was asymptomatic all this time was the active member doing most house chores. However, at this time when 3 family members had recovered, the daughter developed loss of smell and taste, sore throat, indigestion (nausea and bloating like abdominal discomfort) and temperature of 99.5 deg F. She was started on antiseptic gargles and an antacid, with

no other treatment. She was asymptomatic in 4-5 days (except for taste/smell being subnormal), however she was asked to complete the 14-day isolation period at home.

Therefore, for the family, it became an almost 1-month total isolation and monitoring period. The family was further monitored for post-COVID symptoms for a month. Apart from weakness and subnormal taste/smell which took 2-3 weeks further to recover, all members are doing well and are gradually resuming all normal activities.

Discussion :

There are a few interesting learnings and insights from the above account, which also brings forth practical problems and need for innovative solutions when treating multiple members in the same household or a family as a whole.

In most cases, when one of the members acquires COVID, it can infect the whole family. This is an unfortunate reality of present-day urban living in compact houses. When one family member shows the first symptoms of COVID, the norm is to isolate and send swab sample for an RT-PCR. Often isolation presents practical challenges in small residences like those seen in low-income housing and urban slums. Burden on health resources during a high surge of cases, can lead to delay in test reports, necessitating earlier treatment commencement. If the RT-PCR report comes positive, all other family members are tested as well and at this point the RT-PCR of some may be negative especially 48-72 hours post getting infected.[7] The members testing negative especially if they are children or elderly are sometimes sent away to a relative/friend's house to 'protect' them, and to make isolation and treatment of those testing positive easier. The family physician should proactively advise against this in the beginning itself, as these members can later develop symptoms and also test positive if retested after 2-3 days.

Symptoms presented by family members are different in both characteristics and timing of appearance. In this case, loss of smell/taste was seen only in the father and daughter. Cough was seen only in the father and son, fever was developed by all except the daughter, while digestive complaints were seen only in the daughter. The clinical course was mild in 3 members, while the husband (father), showed a moderate course needing more empirical antiviral support, with antibiotic for suggestive secondary bacterial pharyngitis, and corticosteroid for the hyperinflammatory phase with borderline hypoxia in the second week.[8-10] Therefore, a day wise individual chart has to be maintained for each family member to record temperature, oxygen saturations and progress of other symptoms. Blanket or common prescriptions for multiple family members should be avoided, and too much medication when not needed can actually cause gastrointestinal adverse effects and more weakness, hampering effective monitoring of symptom improvement and recovery.

The timing of symptoms of other family members after the first COVID case in the household can also greatly vary, as in this case seen at day 5, 9, and 12. Therefore none of the other house-hold members should be allowed to mingle in public even if asymptomatic or testing negative, for at least 14 days after the first member developed symptoms. If other members become symptomatic in this period, then the same isolation is extended for 14 days from the last family member showing symptoms.[11] The physician can certify recovery from symptoms and end of isolation period, so repeat RT-PCR is not required.

While treating a family, the physician will also have to tackle many other related aspects. Use of common kitchen and cooking may not be possible, and recommendation is needed for the right nutritious diet and apt home-cooked food delivery services. Bed availability in hospitals in the vicinity should also be tracked and monitored, along with having ready contacts of ambulance service with oxygen facility. The physician will need to advise on precautions during interaction of family members like appropriate masking, sharing of household items, home ventilation and sanitation, segregation and hygiene of steamers and thermometers, keeping spare pulse oximeters and its batteries, etc. Guidance on customized and graded exercises is also important for each family member which includes simple

alternate breathing (*pranayama*), normal paced room walking, stretches, and spot exercises, to enable well-being without strain. The family physician has to often answer several queries, impart the right scientific and rational guidance, and guard against pressure from patients on therapies and medicines based on a multidirectional bombardment of information and advice from social media and WhatsApp.

Stress management and psychological support are a very important part of family care for COVID.[12] In this case, the son developed fever at the same time that the father needed extra care in his second week, and mother was also still not recovered. This created high stress for the couple, who needed physician's reassurance and basic counseling. Stress management should be encouraged with reading good books, listening to music, video/audio calls with loved ones, avoiding disturbing media and online content, and being inspired from the fact that most people recover well from COVID at home. The psychological impact on children can also be very high when both parents are ill simultaneously, and therefore regular interaction with the children and reassuring them is also important.[30] Children usually have very mild disease but still should be closely monitored. There are now counseling support services developed for COVID affected families extending to post-recovery period. There are also organizations in place which can take care of COVID affected children in case their parents are severely ill or hospitalized. The family physician should continue to be a central touch point in all these situations.

Conclusion:

The second wave of the COVID pandemic is seen to affect younger age groups <50 years significantly, with often entire families suffering in a given period. The role of the family physician expands beyond disease treatment and meticulous patient monitoring to encompass multiple aspects of care. Guidance, advise and support for the family as a whole on precautions, holistic health and wellbeing, isolation and sanitation, available help services, and addressing psychological impact, are very important. Timely and informed decisions can be taken more effectively with such an approach. COVID care for a family presents learnings and new insights in a physician's professional journey.

References:

1. Narayanan V. COVID Second Wave in India – Revisiting the TIP Approach. *The Indian Practitioner*. Editorial April 2021; 74(4):7-9. Available from https://theindianpractitioner.com/2021/04/21/covid-second-wave-in-india-revisiting-the-tip-approach/
2. World Health Organization – who.int [Internet]: Tracking SARS-CoV-2 Variants. [Updated 31st May 2021; cited 7th June 2021]. Available from https://www.who.int/en/activities/tracking-SARS-CoV-2-variants/
3. The Lancet. India's COVID-19 emergency. *Lancet*. 2021 May 8;397(10286):1683. Available from https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(21)01052-7/fulltext.
4. Gomez T, Anaya YB, Shih KJ, Tarn DM. A Qualitative Study of Primary Care Physicians' Experiences with Telemedicine During COVID-19. *J Am Board Fam Med*. 2021 Feb;34(Suppl): S61-S70. Available on https://pubmed.ncbi.nlm.nih.gov/33622820/.
5. Ng SL, Ong YS, Khaw KY, Teh SP, Tan CS, Ming LC, et al. Focused Review: Potential Rare and Atypical Symptoms as Indicator for Targeted COVID-19 Screening. *Medicina (Kaunas)*. 2021 Feb;57(2):189. Available from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7927030/.
6. Indian Council of Medical Research – icmr.gov.in [Internet]: Clinical Guidance for Management of Adult COVID-19 patients. [Updated 17th May 2021; cited 7th June 2021]. Available from https://www.icmr.gov.in/pdf/covid/techdoc/COVID_Management_Algorithm_17052021.pdf.
7. Kanji J.N, Zelyas N, MacDonald C, Pabbaraju K, Khan MN, Prasad A, et al. False negative rate of COVID-19 PCR testing: a discordant testing analysis. *Virol J* 2021;18:13. Available from https://virologyj.biomedcentral.com/articles/10.1186/s12985-021-01489-0.
8. Agrawal U, Raju R, Udwadia ZF. Favipiravir: A new and emerging antiviral option in COVID-19. Med J Armed Forces India. 2020 Oct; 76(4): 370–376. Available from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7467067/

9. Kow CS, Hasan SS. Use of Azithromycin in COVID-19: A Cautionary Tale. *Clin Drug Investig*. 2020;40(10):989-990. Available from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7438973/
10. Almas T, Ehtesham M, Khan A, Khedro T, Hussain S, Kaneez M et al. (January 07, 2021) Safety and Efficacy of Low-Dose Corticosteroids in Patients with Non-severe Coronavirus Disease 2019: A Retrospective Cohort Study. Cureus January 07, 2021;13(1): e12544. Available from https://www.cureus.com/articles/49656-safety-and-efficacy-of-low-dose-corticosteroids-in-patients-with-non-severe-coronavirus-disease-2019-a-retrospective-cohort-study
11. Dhouib W, Maatoug J, Ayouni I, Zammit N, Ghammem R, Fredj SB, et al. The incubation period during the pandemic of COVID-19: a systematic review and meta-analysis. *Syst Rev* 2021;10:101. Available from https://systematicreviewsjournal.biomedcentral.com/articles/10.1186/s13643-021-01648-y#citeas.
12. Passavanti M, Argentieri A, Barbieri DM, Lou B, Wijayaratna K, Foroutan Mirhosseini AS, et al. psychological impact of COVID-19 and restrictive measures in the world. *J Affect Disord*. 2021 Mar 15;283:36-51. Available from https://pubmed.ncbi.nlm.nih.gov/33516085/.
13. Demaria F, Vicari S. COVID-19 quarantine: Psychological impact and support for children and parents. *Ital J Pediatr*. 2021 Mar 9;47(1):58. Available from https://pubmed.ncbi.nlm.nih.gov/33750452/.