Editorial

Ayurveda and post-acute sequelae of SARS-CoV-2 infection (PASC) Management

The severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) was first detected in China in December 2019. Coronavirus disease 2019 (COVID-19) has been one of the major pandemics affecting all the world and human beings. Since then, more than 241 million people worldwide have been infected and over 4 million people have died from the COVID-19. In Nepal, it is 807 thousand people have been infected and more than 11 thousand people have been died from the disease till date.¹

Although unprecedented efforts from the scientific and medical community have been directed to sequence, diagnose, treat and prevent COVID-19, individuals’ post COVID-19 effects after the acute phase of the disease are yet to be revealed. The terminology has been confusing and not standardized for describing consequences of the infection after recovery from the disease. Different authors have used several terms to describe prolonged symptoms following COVID-19 illness, such as “Long COVID-19”, “post-acute COVID-19”, “persistent COVID-19 symptoms”, “chronic COVID-19”, “post-COVID-19 manifestations”, “long-term COVID-19 effects”, “post-COVID-19 syndrome”, “ongoing COVID-19”, “long-term sequelae”, or “long-haulers” as synonyms. Most recently, the term “post-acute sequelae of SARS-CoV-2 infection” (PASC), “long-COVID-19” and “post-acute COVID-19”, has been utilized.²

Although the severe course of the disease has caused concern since the beginning of the pandemic, as time has passed, the emergence of many post recovery manifestations on survivors has become another cause for concern. Several reports from various parts of the world have shown that COVID-19 has more 50 varieties of long term effects on almost all systems including respiratory, cardiovascular, gastrointestinal, neurological, psychiatric and dermatological systems.³ A considerable part of patients, up to 87.5%, recovering from acute infection continue to suffer from a variety of symptoms including dyspnea, memory loss, cough, myalgia, fatigue and headache.⁴⁻⁶ The data that people who have mild illness or no symptoms during acute infection also suffer from long-term symptoms and show that the disease causes greater damage than appears in infected persons.⁷

The 5 most common manifestations were fatigue (58%), headache (44%), attention disorder (27%), hair loss (25%) and dyspnea (24%). Other symptoms were related to lung disease (cough, chest discomfort, reduced pulmonary diffusing capacity, sleep apnea and pulmonary fibrosis), cardiovascular (arrhythmias, myocarditis, stroke), neurological (dementia, depression, Memory loss, anxiety, attention disorder, obsessive-compulsive disorders) and others were unspecific such as Ageusia, Anosmia, Joint pain, Sweat, Nausea or vomit, hearing loss or tinnitus, Digestive disorders, Weight loss, Cutaneous signs, General pain, Intermittent fever, Sleep disorder, Chills, Health care related mental health, Psychiatric illness, red Eyes, discontinuous flushing, Diabetes mellitus, Sputum, Limb edema, Dizziness, Throat pain, Mood disorders, Dysphoria, Renal failure, Post-traumatic stress disorder (PTSD), Paranoia⁸ and others symptoms. A
couple of studies reported that fatigue was more common in females and one study reported that post-activity polypnea and alopecia were more common in females.\textsuperscript{9,10}

Considering all these signs and symptoms in classical as well as the COVID-19; it can be contemplated as a Kapha-vata Dhatu-Kshaya during the acute phase.\textsuperscript{11} In Ayurveda, the complications of Jwara (Fever) are Swasa (difficulty breathing), Murcha (Fainting), Aruchi (Anorexia), Vamana (Vomiting), Trishna (Thirst), Atisara (Diarrhoea), Vishada (Depression), Hikka (Hiccough), Kasa (Cough), Angamartha (Body-ache) which are the symptoms of COVID -19 infection too.\textsuperscript{12}

Drawing on the Ayurveda classics, contemporary scientific studies and experimental knowledge on similar clinical settings, not with standing the fact that no system of medicine has any evidence-based treatment for COVID-19 yet.\textsuperscript{13} In Nepal, Ministry of Health and Population of Government of Nepal has implemented Ayurveda and Alternative medicines guidelines of preventive measures and management protocol for COVID 19 pandemic that includes immune-promoting Ayurvedic herbs and Ayurvedic polyherbal or herbo-minerals medicines for symptomatic treatment; and pranayama and Yoga for reducing stress and anxiety.\textsuperscript{14}

As per Ayurveda concepts, there is Dhatu-Kshaya & Agnimandya Avastha after Jwaramukti (Post COVID 19 infection). Although the test report may be negative; but if symptoms of shortness of breath are present then it may be state of Jirna Jwara (Chronic fever); and Aushada (Drugs) like Guduchi \textit{(Tinospora cordifolia) (Willd.) Hook. f. and Thoms} and Pippali \textit{(Piper longum LINN)} should be used before Dhatu Poshana (Nutrition to tissue). Dhatu Poshana, Rasayan Sevana (Intake of rejuvenating medication) with drugs like Draksha \textit{(Vitis vinifera Gaertn.)} and Kantakari \textit{(Solanum surratense Burm. f.)}, Vasa \textit{(Adhatoda vasica (L.) Nees.)} for at least 30 days and to combat the residual effects of the virus on the body; Vishaghna chikitsa (Treatment of diseases caused by poisons and toxins) with Vidanga \textit{(Embelia ribes Burm. f.)} or Haridra churna Powder of \textit{(Curcuma longa Linn.)} are suggested after clinical recovery. Cardio-protective, hepatoprotective and renal protective drugs like \textit{Arjuna Churna} \textit{(Powder of Terminalia arjuna (Roxb.) Wight & Arn.)}, Amalaki Churna \textit{(Powder of Emblica officinalis Gaertn.)}, Bhumyamalaki \textit{(Phyllanthus niruri Linn.)}, Punarnava kwatha \textit{(Decoction of Boerhavia diffusa Linn.)} etc. may be given for 30-45 days after clinical recovery to combat toxicity produced from antiviral drug therapy. Deepana (Appetizer) and Pachana (Digestive) drugs like Shadanga Panecya (An equal mixture of dried powder of Musth) \textit{Cyperus rotundus Linn.}, Parpata; \textit{Fumaria indica Hausskn.}, Chandana; \textit{Santalum album Linn.}, Sunthi; \textit{Zingiber officinalis Linn.}, Ushira; \textit{Vetiveria zizaniodes Linn.} and \textit{Netra bala}; \textit{Pavonia odorata Wild.} may be used in case of Diarrhoea, vomiting or loss of appetite and dehydration. Dhatu Poshana and Rasayana may be provided for a time period of 30-45 days as per the discretion of physician.

Ashwagandha Churna \textit{(Powder of Withania somnifera L. Dunal)}, Brahmi Vati \textit{(Tablet)} or Churna \textit{(Powder)} can be used for neurological disorders and Sarswata churna \textit{(Poly herbal formulation; mainly contains Centella asiatica Linn.)} and Kalyan ghrita \textit{(A ghee preparation of poly herbs)} for Psychiatric problems. Neem \textit{(Azardicta indica Linn.)} and its preparation like Margosa oil can be used for dermatological disorders.

Daily practice of Yogasana or therapeutic Yoga \textit{(Surya Namaskara, Dhanurasan (Bow posture); Gaumukhasan (Cow Posture); Ustrasana (Camel posture); Bhujangasan (Cobra posture); Setubandhanasana (Bridge posture) and Padmasana (Lotus poses) for 10 minutes, Pranayama (breathing exercise) like Anulom and Vilom, Kapalbhati, Bhashrika and Bhramari for 10 minutes, loosening exercise (Spinal twisting exercise, joint mobilization exercise) for 10 minutes and Meditation (Omkar chanting, meditative/relaxing music therapy) for 15 minutes in the morning; for at 30-45 minutes collectively can prevent from respiratory problems and anxiety, depression and other mental disorders.\textsuperscript{18,19}

Hence, Ayurveda can positively contribute in mitigation of post-acute sequelae of SARS-CoV-2 infection (PASC) by using single drug therapy, poly herbo-mineral preparations Panchakarma (Purification and detoxification of body) and therapeutic Yoga.
REFERENCES


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