Chapter 6
Herbal Treatment Approach Towards COVID19

Nature has been the enormous medical resource of active compounds which has shown promising results. Apart from the regular allopathic medication some of the medicinal plants with a potential to kill viruses can be tested and used for the therapy making it a safer, economic and less time consuming approach.

6.1 Some of the Medicinal Plants in the COVID Therapy

Previous studies related to the herbs and their antiviral properties can be made use in the treatment of COVID as an additional supplement to the regular medication. Some of the well-known herbal products include.

6.2 Zingiber Officinale/Ginger

See Fig. 6.2.

Several studies on the medicinal property of ginger have revealed its antiviral activity. Studies based on tissue culture revealed that fresh ginger have successfully acted against the Human respiratory Syncytial Viruses (HRSV) by preventing their binding to the cells of the upper respiratory tract. One of the studies by Chang et al. (2019) has showed that the use of 300 micrograms per milliliter of fresh ginger induced the release of an antiviral protein by the cells called interferon beta [1]. The antiviral efficiency of interferon alpha in covid19 is already described by Erwan Sallard et al. in June 2020 [2].
Fig. 6.1  Dos and Don’ts as the latest advisory to states. Picture Credit https://economictimes.indiatimes.com/news/politics-and-nation/ayush-pushes-traditional-cure-med-council-backs-modern-drugs/articleshow/74680699.cms?from=mdr

Fig. 6.2  Zingiber Officinale/ginger

Ginger is known since long for its activity against common cold and flu, by inhibiting the viruses causing these symptoms. Ginger has proved its efficacy against several viral infections like Norwalk virus surrogate [3], human respiratory syncytial virus [4], influenza A [5], common cold [5], herpes [6], retroviral nausea and vomiting [7].
6.3 Allium Sativum/Garlic

See Fig. 6.3.

Garlic, a common food ingredient in Indian and Western food is known for its natural antiviral efficiency. A study by Mehrbod et al. (2009) proved the antiviral activity of Garlic against the Influenza virus [8]. The antiviral activity of garlic has also been reported in several viral infections like influenza A and B (Fenwick and Hanley [9]), cytomegalovirus (Meng et al. [10]), rhinovirus, HIV, herpes simplex virus (Tsai et al. [11]), herpes simplex virus 2 (Weber et al. [12]), viral pneumonia, and rotavirus [13].

6.4 Tinospora Cordifolia/Giloy

See Fig. 6.4.

Giloy is a common climbing shrub found growing with other plants in the fields as a weed or roadside. It is known to have several beneficial activities as explained by herbal science. It is known to possess several medicinal and therapeutic activities including its activity against the HIV [14]. Docking studies have also revealed that
certain alkaloids extracted from *Tinospora cordifolia* can bind to the active sites of HIV 1 protease with a good affinity [15].

### 6.5 Ocimum Tenuiflorum/Tulsi and Withania Somnifera/Ashwaganda

See Figs. 6.5 and 6.6.

One of the recent report released by Acharya Balakrishna (MD, Pathanjali Ayurveda) stated that Ashwagandha, Tulsi and Tinospora when used in combination would potentially inhibit the COVID 19. Their study was further supported by in silico docking studies which revealed that the phytochemicals from Ashwagandha would inhibit the ACE2 of the host, which is the major site to which the Receptor Binding Domain (RBD) of virus attaches with its spike proteins. The docking studies of this herb with ACE2 reported a very good binding efficiency. This binding would inhibit the entry of the virus into the host cells thus preventing the infection [16] (Fig. 6.7).

**Fig. 6.5** Ocimum tenuiflorum/Tulsi

**Fig. 6.6** Withania Somnifera/Ashwaganda
Ayurveda and Herbal therapies have enough potential and possibilities to be employed both for prevention and treatment of COVID-19 [17]. This will provide an important opportunity for learning and generating credible evidence. It is pertinent to reiterate that participation of Ayurveda in addressing the COVID-19 challenge in India should not remain limited and seen as the extension of healthcare services and support to bio-medical system. Indeed, with adequate monitoring and data keeping during the implementation, important lessons and research directions are likely to emerge on the management of increasingly frequent and virulent communicable diseases [18]. However clinical observation and trials are needed for understanding efficacy of such active compounds and medicines before usages for general public. India is one of the oldest users of Ayurveda and Herbal medicines. There are 3598 AYUSH hospitals available in the country including 2818 Ayurveda hospitals. Similarly, there are 25,723 AYUSH dispensaries including 15,291 Ayurveda dispensaries [19]. There are total 7.73 lakh registered AYUSH practitioners including 4.28 lakh Ayurveda practitioners [20].

References

1. San Chang J, Wang KC, Yeh CF, Shieh DE, Chiang LC (2013) Fresh ginger (Zingiber officinale) has anti-viral activity against human respiratory syncytial virus in human respiratory tract cell lines. J Ethnopharmacol 2013 Jan 9 145(1):146–51. https://doi.org/10.1016/j.jep.2012.10.043. Epub 2012 Nov 1. https://www.ncbi.nlm.nih.gov/pubmed/23123794
2. https://www.sciencedirect.com/science/article/pii/S0166354220302059
3. https://valuecarepharmacy.net/how-fresh-ginger-can-cure-coronavirus/
4. https://www.konetou.mu/health-topics/ginger-found-to-inhibit-human-respiratory-syncytial-virus.htm
5. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5056903/
6. https://www.researchgate.net/publication/5869511_Inhibitory_effect_of_essential_oils_agai
7. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4818021/
8. Mehrbod P, Amini E, Tavassoti-Kheiri M (2009) Antiviral activity of garlic extract on Influenza
9. Fenwick GR, Hanley AB (1985) Allium species poisoning, Vet Rec 116(1):28
10. Meng Y, Lu D, Guo N, Zhang L, Zhou G (1993) Anti-HCMV effect of garlic components.
11. Guo NL, Lu DP, Woods GL, Reed E, Zhou GZ, Zhang LB, Waldman RH (1993) Demonstration
12. Tsai Y, Cole LL, Davis LE, Lockwood SJ, Simmons V, Wild GC (1985) Antiviral properties
13. Weber ND, Andersen DO, North JA, Murray BK, Lawson LD, Hughes BG (1992) In vitro
14. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3644751/
15. https://www.researchgate.net/publication/271850165_Molecular_Docking_of_HIV-1_Prot
16. https://www.businesstoday.in/current/corporate/have-ashwagandha-giloy-tulsi-to-fight-cor
17. Rastogi S et al (2020) COVID-19 pandemic: a pragmatic plan for Ayurveda Intervention.
18. Yi Y, Lagniton PNP, Ye S, Li E, Xu R-H (2020) Covid-19: what has been learned and to be
19. Press Information Bureau, Government of India. 2020. https://pib.Gov.In/newssite/printrele
20. http://ayush.Gov.In/sites/default/files/16%20licensed_pharmacies%202018.Pdf