



॥ श्री धन्वंतरये नमः ॥

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सूक्ष्मस्वच्छातिहृद्यांशुकपरिविलसन् मौलिमम्भोजनेत्रम् ॥  
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डॉ. दिलीप पुराणिक

कोरोना व्हायरसचा जगभर धुमाकूळ चालू होवून आता जवळ जवळ चार महिने पूर्ण झाले असून थोड्या बहुत सर्व देशांना कोरोनाने आपल्या विळख्यात जखडून टाकले आहे. वीस लाखांपेक्षा अधिक व्यक्तींना या कोरोना नामक विषाणूचा संसर्ग झाला असून COVID 19 ने दोन लाखांपेक्षा अधिक बळी घेतले असल्यानेच त्यास बोली भाषेत महामारी असे संबोधण्यात येत आहे. यामध्ये विशेष म्हणजे आत्तापर्यंत झालेल्या विषाणूच्या संसर्गापेक्षा कोरोना विषाणूच्या संसर्गाची तीव्रता अधिक असून एकदा शरीरात संसर्ग झाल्यानंतर हा विषाणू फुफ्फुसे अथवा किडनीसारखे महत्वाचे अवयव निकामी करतो व अल्पावधीतच रुग्णाचा बळी घेतो.

चीन देशात डिसेंबर २०१९ मध्ये सुरु झालेल्या कोरोनाच्या संसर्गाने बघता बघता वैद्यकीयदृष्ट्या अतिशय पुढारलेल्या अमेरिका व युरोपीय देशांमध्ये इटली, स्पेन या देशात संचार केला व संसर्गाने बाधित COVID 19 च्या हजारो रुग्णांचा घास घेतला. त्यातही अमेरिकेसारख्या वैद्यकीयदृष्ट्या अधिक पुढारलेल्या देशातील बळींचा आकडा सर्वात अधिक असल्याने सर्वच वैज्ञानिक चक्रावून गेले आहेत.

COVID 19 हा विषाणूजन्य व्याधी असल्याने अर्वाचिन वैद्यकात त्यावर शीघ्र परीणाम करणारे कोणतेही औषध नाही. तसेच या व्याधीला रोखू शकणारी परीणामकारक लस (Vaccine) नाही. त्यामुळे आता या व्याधीवर काम करणारी लस शोधण्याचे काम अनेक शास्त्रज्ञ व औषध निर्मिती करणाऱ्या संस्था निकराचे प्रयत्न करीत आहेत. या प्रयत्नांचा भाग म्हणून काम करताना काही तज्ज्ञांना मलेरीया व्याधीवरील हायड्रॉक्सीक्लोरोक्विन या औषधाचा COVID 19 रुग्णांमध्ये चांगला परीणाम होत असल्याचे लक्षात आले. त्यामुळेच अमेरिकेसारख्या देशाने भारताकडून हायड्रॉक्सीक्लोरोक्विन या औषधाची कोट्यवधी डॉलर्स किंमत मोजून आयात केली. इतर काही देशांनीही अमेरिकेचा किता गिरवला आहे.

हायड्रॉक्सीक्लोरोक्विन व अँझिथ्रोमायसिन मुळे अनेक रुग्णांना रोगमुक्त केले. या औषधांबरोबरच Plasma Therapy चा उपयोग COVID 19 बाधित रुग्णांमध्ये चांगला झाल्याचा निष्कर्ष निघाला असला तरी या चिकित्सेच्या प्रयोग चाचण्या अधिक व्यापक प्रमाणावर होण्याची आवश्यकता आहे. कोरोना विषाणूच्या संसर्गजन्य आजारावर खात्रीपूर्वक व शीघ्र परीणाम करणाऱ्या औषधांची अर्वाचिन चिकित्सा पद्धतीत वानवा आहे हे सिद्ध झाले असल्यानेच अनेक शास्त्रज्ञ पर्यायी वैद्यकाचाही शोध घेत आहेत. ज्या देशात COVID 19 व्याधीची सुरुवात झाली त्या चीन देशाचे पारंपारीक वैद्यक म्हणजे चायनिज मेडिसिन. चीन देशातील कोरोना विषाणू संसर्गाची लाट कमी झाल्यावर पारंपारीक चायनिज

मेडिसिनच्या (Traditional Chinese Medicine - TCM) चाचण्या घेण्यात आल्या असता त्याचे परीणाम चांगले असल्याचे आढळून आले आहे. आत्तापर्यंत साठ हजारांपेक्षा जास्त रुग्णांवर अशा चायनिज मेडिसिनद्वारा उपचार करण्यात आले आहेत.

COVID 19 व्याधीचा संसर्ग होण्याचे प्रमाण वृद्ध (old age) तसेच मधुमेह, उच्च रक्तदाब, हृद्रोग असलेल्या व्यक्तींमध्ये जास्त असल्याचे आढळून आले आहे. थोडक्यात व्याधीक्षमत्व, रोगप्रतिकारशक्ती कमी असलेल्या व्यक्तींना या विषाणूचा संसर्ग होण्याची शक्यता जास्त असते. या बाबींचा विचार केल्यानंतर भारताचे प्राचीन वैद्यक असलेल्या आयुर्वेदीय चिकित्सेचा उपयोग सदर व्यक्तींमध्ये करण्याची संकल्पना पुढे आली. विशेष बाब म्हणजे केंद्र शासनाच्या 'आयुष' विभागाने याकामी पुढाकार घेतला आहे.

रोगप्रतिकारशक्ती तसेच व्याधीक्षमत्व वाढविण्याच्या दृष्टीकोनातून सहा हजार कोरोना बाधित परंतु लक्षणविरहीत रुग्णांमध्ये 'आयुष' विभागातर्फे आयुर्वेदीय औषधांची चिकित्सा करण्यात आली. विलगीकरण कक्षात ठेवलेल्या रुग्णांची कोरोना चाचणी आयुर्वेदीय चिकित्सेनंतर करण्यात आली असता ती नकारात्मक (-ve) आली. फक्त अकरा रुग्णात ही चाचणी सकारात्मक (+ve) आली. या रुग्णांनी चिकित्साक्रम पूर्ण न केल्यानेच तसे घडल्याची शक्यता नाकारता येत नाही.

आरोग्यदृष्ट्या जोखमीच्या किंवा धोकादायक व्यक्तींमध्ये आयुर्वेदीय पद्धतीच्या आहाराचा उपयोग करण्याचा सल्ला देण्यात आला आहे. आंबवलेले पदार्थ, अतिशीत पदार्थ, बेकरीमधील पदार्थ वर्ज्य सांगितले आहे. गोवा, हरीयाणा, केरळ या राज्यांमध्ये लक्षणविरहीत कोरोना बाधित रुग्णांमध्ये आयुर्वेदीय पद्धतीची चिकित्सा यशस्वीपणे करण्यात आली आहे. इंडीयन काउंसिल ऑफ मेडीकल रिसर्चच्या मान्यतेनंतर प्रथम कोरोना बाधित लक्षणविरहीत रुग्णांमध्ये व नंतर लक्षणे असलेल्या रुग्णांवर आयुर्वेदीय उपचार आयुष विभागातर्फे करण्यात येणार आहेत. आयुष विभागातर्फे मान्यतेसाठी सादर केलेल्या प्रस्तावामध्ये कोरोना ग्रस्तांचे चार संवर्ग केले असून आयुर्वेदीय उपचार पद्धती वैशिष्ट्यानुसार उपचार केले जाणार आहेत. यामध्ये आहार, विहार, औषधी, रसायन चिकित्सा तसेच अत्यायिक चिकित्सेत लक्ष्मीविलास रस, लघुमालिनी वसंत, बृहत वात चिंतामणी यासारख्या औषधांची चिकित्सा सुचविण्यात आली आहे. ज्या परिस्थितीत अर्वाचिन वैद्यकशास्त्रात परिणामकारक चिकित्सा उपलब्ध नाही अशा परिस्थितीत निदान पर्यायी चिकित्सा पद्धती म्हणून आयुर्वेद व योग नक्कीच परिणामकारक म्हणून सिद्ध होईल अशी आशा करण्यास काहीच हरकत नाही.





## जनपदोद्धंस - आयुर्वेदीय दृष्टीकोन

वैद्य मिहिर हजरनीस, प्राध्यापक व विभाग प्रमुख, स्वस्थवृत्त व योग विभाग, टिळक आयुर्वेद महाविद्यालय, पुणे.

**प्रास्ताविक** - सध्या संपूर्ण जगामध्ये एका व्याधीने थैमान घातले आहे. हा व्याधी म्हणजे कोविड-१९. कोरोना व्हायरस ह्या विषाणुमुळे हा व्याधी डिसेंबर २०१९ मध्ये चीन मधील वुहान ह्या शहरात प्रथम निदर्शनास आला. भारतामध्ये ह्याचा पहिला रुग्ण केरळमध्ये ३० जानेवारी २०२० मधे सापडला. प्राधान्याने सुरुवातीला चीनमधून विमान प्रवास करून भारतात परतलेल्यांची तपासणी ह्या व्याधीकरीता केली गेली. कालांतराने सर्वच आंतरराष्ट्रीय विमानतळांवर भारतामध्ये प्रवाश्यांची तपासणी केली जाऊ सांगली. ह्या तपासणीतून सर्दी, खोकला, ताप ही लक्षणे असणा-यांना, ही लक्षणे नसणा-यांपासून अलग करण्यात आले. ह्या व्याधीच्या विषाणुचा रोगोद्भवण काल १४ दिवसांचा असल्याने संशयीत रुग्णांना १४ दिवस अलग करण्यात येऊ लागले. ह्यालाच क्वारंटाईन म्हणतात. ज्यांना हा व्याधी झाला आहे असे निश्चित झालेया त्यांचे पृथक्करण (आयसोलेशन) करून उपचार सुरु करण्यात आले. ह्या विषाणुवर जगभरात औषध सापडले नसल्याने केवळ प्रतिबंधात्मक उपचार, लाक्षणिक चिकित्सा व गरजेनुसार आत्ययिक चिकित्सा असे धोरण सुरु आहे. तसेच स्वस्थ लोकांनी ह्या विषाणुच्या संपर्कात येऊ नये म्हणून सोशल डिस्टेंसिंग साध्यण्यासाठी सर्वांनी घरी रहावे, घराबाहेर पडू नये असे आवाहन करण्यात आले.

ह्या व्याधीचा विषाणु हा एका व्यक्तीकडून दुस-या व्यक्तीस रुग्णाच्या शिक , खोल्यातून बाहेर पडणा-या स्रावांमधून दुस-या व्यक्तीस नाक, डोळे व तोंडावाटे शरीरात जाऊन विकार निर्माण करू लागतो. तसेच रुग्णाच्या शिक, खोल्यामधून बाहेर पडणारा हा स्राव वावरणात पसरतो, धुळीमध्ये, निर्जीव वस्तुंवर जसे कपडे, भांडी, व अन्य वस्तुंवर स्राव पडतो व त्यातील विषाणु तेथे २४ तांस ते ७२ तास जिवंत राहतो. आजार नसलेला व्यक्ती ह्या वस्तुंच्या प्रत्यक्ष संपर्कात आल्यास किंवा रुग्णाच्या सतत संपर्कात आल्यास हा विषाणु रुग्णाकडून संपर्कातील व्यक्तीस संक्रमित होतो. ह्या विषाणुचा नाश साबणाच्या संपर्काने किंवा अल्कोहल असलेल्या सॅनिटायझरने नष्ट होतो. म्हणून हॅन्ड हायजिन (हाताची स्वच्छता), खोकताना, शिकताना तोंडावर रुमाल धरणे, थुंकताना वातावरणात,बाहेर रसत्यावर कोठेही न थुंकता थुकदाणीतच थुंकणे हे नियम पाळणे, हा ह्या व्याधीच्या प्रतिबंधाचा उपाय म्हणून केला जाऊ लागला. तसेच दोन व्यक्तींमध्ये किमान एक मिटरचे (तीन फूट) अंतर राखून व्यवहार करणे हा प्रतिबंधाचा महत्त्वाचा मुद्दा सांगितला आहे. ह्यालाच सोशल डिस्टेंसिंग, फिजीकल

डिस्टेंसिंग म्हणतात. ह्या व्याधीची प्रधान लक्षणे म्हणजे- ज्वर (ताप), प्रतिश्याय (सर्दी), कास(खोकला), कंठ शूल (घसा धरणे) व कालांतराने श्वासकृच्छ्रता (श्वासकष्टता) होय. काही रुग्णांमध्ये गंधज्ञान नष्ट होणे, शिरःशूल ही लक्षणे पण दिसतात. ह्या व्याधीचा प्रसार एका व्यक्तीकडून दुस-या व्यक्तीस झपाट्याने होतो. जगभरामध्ये अनेक रुग्णांचा ह्या व्याधीमुळे मृत्यु झाला आहे. एकाच वेळी अनेकांना ह्या व्याधीने ग्रासले आहे व काही जणांचा मृत्यु ह्यामुळे होत आहे. जगभरात व भारतामध्ये ह्याचा प्रसार मोठ्याप्रमाणावर झाल्यामुळे जनपदोद्ध्वंस ह्या प्रकरणामध्ये ह्याचा समावेश होतो. जागतिक आरोग्य संघटनेने ह्यास पॅन्डेमिक म्हणून घोषित केले आहे.

कोविड १९चे आयुर्वेदिक उपचार यांची येथे चर्चा करणार नाही आहोत, तर जनपदोद्ध्वंसाचा आयुर्वेद दृष्टीकोन बघणार आहोत.एकाच वेळी जेव्हा अनेक व्यक्ती एकाच आजाराने ग्रस्त होतात व मृत्यु पावतात तेव्हा त्या घटनेला आयुर्वेदामध्ये जनपदोद्ध्वंस असे संबोधले जाते. जनपदोद्ध्वंसाची कारणे, लक्षणे व चिकित्सा ह्याचा विचार आपण करूयात. चरकसंहितेमध्ये विमानस्थान अध्याय क्रमांक ३ जनपदोद्ध्वंस अध्याय व सुश्रुतसंहितेमध्ये सूत्रस्थान अध्याय क्रमांक ६ ऋतुचर्या अध्याय ह्यामध्ये ह्याचे संदर्भ सापडतात.

व्याधी निर्माण करणारे दोन हेतु आहेत. १. साधारण व २. असाधारण. प्रति व्यक्ती निहाय वात, पित्त, कफ यांना बिघडविणारी आहार विहारात्मक कारणे ही साधारण कारणे आहेत. पुष्कळ लोकांचे, अनेकांचे आरोग्य एकाच वेळी बिघडविणारी कारणे म्हणजे असाधारण हेतु होय. ही कारणे प्रमुख्याने चार आहेत- १) दूषित वायु २) दूषित जल ३) दूषित देश (भूमि) ४) दूषित काल. ह्या चार कारणांच्या जोडीला वात, पित्त, कफ बिघडविणारी कारणे घडत गेल्यास अनेकांचे आरोग्य एकाच वेळी एकाच व्याधीने बिघडते व जनपदाचा उद्ध्वंस म्हणजेच नाश होतो.

नक्षत्र, ग्रह, चंद्र, सूर्य, वायु, अग्नि व दिशा यांची नैसर्गिक, स्वाभाविक प्रवृत्ती न होता अनैसर्गिक, अस्वाभाविक प्रवृत्ती होते ज्यामुळे ऋतु विपर्यय दिसतो. ऋतुची लक्षणे न दिसता दुस-याच ऋतुची लक्षणे दिसतात. म्हणजे ग्रीष्म ऋतुमध्ये वर्षा होणे, (उन्हाळ्यात पावसाळा), हिवाळ्यात उन्हाळा किंवा पावसाळा, पावसाळ्यात उन्हाळा ह्याला ऋतु विपर्यय म्हणतात. ह्या ऋतुबदलामुळे वनस्पती औषधांमधील रस (चव), वीर्य (कार्यकारी शक्ती), विपाक (परिणाम) व प्रभाव (अचिंत्य शक्ती) यामध्ये बदल होतो,

म्हणजे औषधाच्या गुणांमध्ये बदल होतो. ह्या गुण बदलामुळे साध्य विकार असाध्य होतो. म्हणून जनपदोद्ध्वंसामुळे होणा-या विकारांमध्ये असाध्यता दिसते.

एक प्रश्न येथे उपस्थित होतो की असमान प्रकृती, आहार, वय, शरीर बल, सात्म्यता (सवयी) व सत्व (मानसिकता) असून देखील एकाचवेळी अनेकांना एकच आजार होऊन त्यातून बहुसंख्य लोकांचा नाश कसा होतो? तर एकाच लक्षण समुच्चयानेयुक्त व एकाच काळामध्ये अनेकांना एकच व्याधी होऊन जनपदाचानाश होण्यामागे वर सांगितल्या प्रमाणे वायु, जल, देश व कालामधील बिघाड कारणीभूत ठरतो.

वायुमध्ये बिघाड होतो म्हणजे ऋतुनुसार वारा वाहत नाही, अतिशय स्तब्ध, किंवा वेगवान गतिने वारा वाहतो (वादळ येतात). ह्याला सायक्लॉन्स म्हणतात. अतिशीत, अति उष्ण, अतिरूक्ष व अतिपरूष(खरखरीत) वारे वाहतात, वादळ निर्माण होते, न आवडणारे गंध, बाष्प, मातीचे कण, धूर हवेमध्ये परसतात व हवा दूषित होते.

जल बिघडते म्हणजे त्यामध्ये विकृत गंध, वर्ण, रस(चव), स्पर्श व चिकटपणा निर्माण होतो. पाण्यामध्ये विहार करणारे प्राणी, पक्षी ते जलाशय सोडून जातात किंवा व्याधीने पीडीत होऊन मृत्य पावतात.

देश बिघडतो म्हणजे तेथे नैसर्गिक आपत्ती जशी पूर, भूकंप, दुष्काळ, सुनामी, व्होलकॅनो इत्यादि निर्माण होतात. त्या देशातील भूमीचा वर्ण, रस, स्पर्श, विकृत होतो, जमीन अति क्लेदयुक्त (दलदल) होते, अनेक हिंसक प्राण्यांनी व्याप्त होते, अनेक वेळीनी व्याप्त होते, काही ठिकाणी भूकंप होतो ज्यामुळे झाडे, वेली, वृक्ष, घरे कोलमडून पडतात, प्राणी विचित्र वागतात, मनुष्य हानि होते. काही ठिकाणी आकाशातून उल्कापात होतो, वीज पडून मनुष्य, प्राणी व घरांची हानि होते. देश बिघडतो म्हणजे तेथील लोक सत्य, लज्जा, आचार, स्वभाव यांचा त्याग करून वागतात. एकुणच निरंतर भितीचे, अंधकाराचे वातावरण ज्या देशात, भूमीत निर्माण झाले आहे तो देश दूषित झाला असे समजावे.

काल दूषित होतो म्हणजे वर सांगितल्यानुसार ऋतु विपरीत लक्षणे दिसतात. ऋतुची लक्षणे कमी किंवा जास्त दिसतात. या प्रमाणे वरील चार कारणे एकाच वेळी किंवा त्यातील एक किंवा दोन कारणे दोषयुक्त असणे जनपदोद्ध्वंसाला कारणीभूत ठरतात.

जनपदोद्ध्वंस करणा-या ह्या भावांमध्ये वायुहून अधिक जल, जलाहून अधिक देश, देशाहून अधिक काल हाच मुख्य असतो. कालालाच ग्रंथकार मुख्य कारण मानतात. सुश्रुताचार्य ह्या चार कारणांचाच उल्लेख करतात. ह्यामुळे होणा-या व्याधींना मरक व्याधी असे संबोधतात.

वायु, जल, देश, काल दूषित होण्यामागे अधर्म हे महत्त्वाचे कारण चरक व सुश्रुतांनी सांगितले आहे. सुश्रुतांनी

ऋतुबदल नसताना वायु, जल, देश व कालाच्या दुष्टीस अदृष्टकारीता कारणीभूत आहे असे सांगितले आहे. अदृष्टकारीतेचे स्पष्टीकरण उल्लेखांनी त्यांच्या निबंधसंग्रह टिकेत केले आहे- जनसामान्यांमध्ये जेव्हा अधर्म संचारते तेव्हा विविध रोग पसरतात व जनसमूहांचा नाश करतात. अधर्माच्यामुळाशी प्रज्ञापराध हे कारण असते. प्रज्ञापराध म्हणजे- धी (बुद्धी), धृति (धारणाशक्ती- वील पांवर), स्मृती (स्मरणशक्ती) भ्रष्ट होते तेव्हा मनुष्य अशुभ कर्म करतो व त्यामुळे शारिरीक, मानसिक स्तरावर दोषांचा प्रकोप होतो व विकार उत्पन्न होतात. अशुभ कृत्यांमध्ये सदाचार सोडून वागणे जसे हिंसाचार-आतंकवादि हल्ला, (जाती, धर्मांमधील हिंसाचार, देशा देशांमधील संबंधांमधे असूया, अशांतता), खून, मारामारी, बलात्कार, भ्रष्टाचार, लूटालूट, चोरी, ईर्ष्या, दुराभिमान, भय, क्रोध, लोभ, मोह, मद, भ्रम आदि मनोभावनांनी सतत व्याप्त असणे. ह्या मनोभावनांमुळे निंदनीय शारिरीक व मानसिक कृत्ये सतत करत राहणे म्हणजेच प्रज्ञापराध. ह्या शिवाय नैसर्गिक वेगांचे (मल, मूत्र, क्षुधा, तृष्णा, निद्रा, जुंभा इत्यादि) बलपूर्वक उदीरण करणे किंवा वेग आला असताना धारण करणे, स्वतःच्या क्षमतेबाहेरचे काम करणे- अध्वगमन (खूप वेळ लांबपर्यंत चंक्रमण करणे, पायी चालणे), अन्य क्षमतेबाहेरील साहस कृत्ये करणे, योग्य वेळेवर कोणतेही काम न करणे (वेळेची उपेक्षा करणे), माहित असून देखील वार्डेट गोष्टींचे आचरण करणे, मनाला उद्विग्न करणा-या विषयांचे सेवन करणे, अवेळी घरा बाहेर संचार करणे (सध्या हे खूप महत्त्वाचे आहे), पूज्य व्यक्तींचा अपमान करणे, अतिप्रमाणात मैथुन करणे, दुष्कृत्य करणा-यांशी मैत्री करणे- ह्या सर्वांचा प्रज्ञापराधामध्ये समावेश होतो. सध्याचा काळ पाहिला तर समाजामध्ये, देशामध्ये इतर देशांमध्ये सदाचार सोडून वागणूक सुरु आहे. सर्वत्र अधर्म संचारले आहे. जे जनपदोद्ध्वंसक व्याधींचे कारण आहे. जेव्हा दोन देशांमध्ये, राज्यांमध्ये युद्ध होते तेव्हा बहुसंख्य लोकांच्या मृत्युलापण अधर्म हेच कारण असते.

ऋतुबदल किंवा विकृत झाला नसताना सुध्दा कोणत्यातरी मंत्रित अभिशापाने, (गुरु, सिद्ध योगी, ऋषी यांच्या क्रोधांमुळे), राक्षसी विशेष अश्या अभिचारज कर्मांमुळे (रक्ष क्रोध- दुस-याची हिंसा करण्याच्या हेतूंनी राक्षस कुलातल्या गणांनी) किंवा भूतादिंच्या समूहानी जनपदांचा नाश होतो. चरकाचार्य शारीरस्थानात असात्म्यइंद्रियार्थ संयोगाचे वर्णन करताना स्पर्शनेंद्रिय मिथ्यायोगाबाबत पुढील संदर्भ देतात-

**यो भूत विषवातानामकालेनागतश्च यः।**

**स्नेहशीतोष्णसंस्पर्शा मिथ्या योगः स उच्यते।** (च.शा. १।११६) असा संदर्भ देतात. चक्रपाणी या वरील टिकेमध्ये भूत म्हणजे सविषक्रिमी शाचादयः। असे स्पष्टीकरण देतात. चरक,

सुश्रुत या दोनेही ग्रंथात भूतादिनी जनपदोद्धंस होतो असे म्हणतात. सुश्रुताचार्य या भूतादिंचे (क्रिमींचे) गमन वायु द्वारा होते व सर्व राष्ट्रांचा नाश करण्याच्या हेतुंनी जनसामान्यांचे आरोग्य बिघडत जाते असे लिहीतात. येथे हे क्रिमी अत्यंत सूक्ष्म असतात असे वर्णन आहे. सूक्ष्म क्रिमींचा विषाणु, जीवाणु म्हणून विचार करायला पाहिजे.

### जनपदोद्धंसक व्याधीची कारणे व लक्षणे-

दोष व प्रकृति विशेषामुळे पुढील लक्षणे मनुष्यामध्ये व्यक्त होतात- कास, श्वास, वमथु, प्रतिश्याय, गंध अज्ञान, भ्रम, शिरःशूल व ज्वर. या लक्षणांमध्ये वायुद्वारा नासारंध्रातून हे भूतादि शरीरात प्रवेश करून कास, श्वास, प्रतिश्याय, गंध अज्ञान, भ्रम व शिरःशूल निर्माण होतात. तर स्पर्शनेंद्रियाच्या माध्यमातून ज्वर, मसूरिकादि लक्षणे उत्पन्न होतात. सुश्रुतांनी व भावप्रकाशांनी संसर्ग विकारांची कारणे सांगितली आहेत - संसर्ग झालेल्या व्यक्ती सोबत सतत संपर्क, गात्र स्पर्श, निःश्वासाद्वारे, एकत्र भोजन केल्यामुळे, एक आसन, एक शय्या वापरल्यामुळे, आणि वस्त्र, माला, अनुलेपनाची द्रव्ये इत्यादि वस्तु एकमेकांच्या वापरल्यामुळे एका व्यक्तीकडून दुस-या व्यक्तीस संक्रामक विकार पसरतात असे म्हटले आहे. ह्या विकारांमध्ये कुष्ठ, ज्वर. शोष, नेत्राभिष्यंद, उपदंश, कंडू, दूषित वायुद्वारा ज्वर व्रण व भूतोन्माद ह्या विकारांचा उल्लेख केलेला आहे. ह्या शिवाय औपसर्गिक रोग सुद्धा होतात असे म्हटले आहे. औपसर्गिक रोग म्हणजे भूतादिंमुळे होणारे विकार. भूत म्हणजे सूक्ष्म क्रिमी होय. आत्ताच्या परिभाषेत जीवाणु, विषाणु होय. सध्या झपाट्याने पसरणा-या कोरोना व्हायरस ह्या विषाणुचा समावेश ह्यात करता येईल. सुश्रुताचार्य म्हणतात की ही वर उद्धृत केलेली लक्षणे जशी वायु द्वारा पसरतात, तशीच ती शयन, आसन स्थानांमधून, विविध यान, प्रवाशाच्या साधनातून, मणि, रत्न किंवा अन्य उपकरणांमधून एका व्यक्तीकडून दुस-यास पसरतात असे सांगितले आहे. सध्या विविध निर्जीव वस्तु (फोमार्ईट्स) यांच्या द्वारा व्याधीचा प्रसार होतो असे सापडले आहे. आपल्याकडे भारतामध्ये कोविड-१९ चे रूग्ण हे कोविड-१९ बाधित देशामधून विमान प्रवास करून आलेले आढळले. नंतर संसर्ग झालेल्या व्यक्तीकडून संसर्ग नसलेल्यांना विकार होत गेला. ह्या कारणास्तव ह्या निर्जीव संसर्ग झालेल्या वस्तुंचा, स्थानांचा त्याग करावा असे सुश्रुतांनी सांगितले आहे व सध्या अशा वस्तुंना किंवा रुग्णाच्या स्त्रावांना स्पर्श झाल्याने साबणाने २० सेकंद हात धुण्यास सांगितले जाते.

व्याधी अनुक्त असेल तर व्याधीचे निदान करण्याची मार्गदर्शक तत्त्वे ग्रंथात सांगितली आहेत.

**विकारनामाकुशलो न जि-हीयात् कदाचन ।**

**न हि सर्व विकाराणां नामतो अस्ति ध्रुवा स्थितिः ।।**

**स एव कुपितो दोषः समुत्थान विशेषतः ।**

**स्थानान्तरगतश्चैव जनयत्यामयान् बहुन् ।।**

**तस्माद्विकार प्रकृतीरधिष्ठानान्नतराणि च ।**

**समुत्थान विशेषांश्च बुद्ध्वा कर्म समाचरेत् ।।**

**यो हि एतद् त्रितयं ज्ञात्वा कर्माण्यारभते भिषक् ।**

**ज्ञानपूर्वं यथान्याय्यं सकर्मसु न मुह्यति ।। (चरक संहिता सूत्रस्थान-१८ १४५-४६)**

वरील मार्गदर्शक तत्वानुसार नवीन व्याधीची कारणे, लक्षणे यांचा विचार करून दोष- दूष्य संमूर्च्छना मांडावी. जनपदोद्धंसक व्याधीची चिकित्सा -

**१) युक्तीव्यपाश्रय चिकित्सा** - कोणत्याही जनपदोद्धंसक व्याधीमध्ये त्या व्याधीच्या लक्षणानुसार औषधे व इतर उपाय करावेत असे सांगितले आहे. सध्या कोरोना व्हायरसमुळे होणा-या कोविड-१९ ची लक्षणे आयुर्वेदानुसार प्राणवहस्त्रोतस दुष्ट झाल्याची लक्षणे आहेत. प्राणवह स्त्रोतसाची चिकित्सा तत्त्वे थोडक्यात बघुयात- प्राणवहस्त्रोतसाचे मूल स्थान महास्त्रोतस व हृदय आहे. महास्त्रोतसामध्ये मुख ते गुद हा संपूर्ण अन्ननलिकेचा भाग, आमाशयाचा भाग समाविष्ट होतो. आमाशयात नाभि ते स्तन ह्या भागातील सर्व कोष्ठांगांचा समावेश होतो. फुफ्फुस, यकृत, प्लीहा, हृदय, पित्ताशय, अग्न्याशय, पोट, लहान आतडे ह्यांचा समावेश होतो, फुफ्फुसाची निर्मिती रक्त फेनोद्भव सांगितली आहे. नाभिक्या खालचा भाग सुद्धा महास्त्रोतसात येतो. वृक्क, मूत्रपिंड, मोठे आतडे, गुद यांचा समावेश त्यात होतो. प्राणवहस्त्रोतसाची चिकित्सा श्वास व्याधी प्रमाणे करावी असे चिकित्सा सूत्र आहे. श्वास व्याधी आमाशय समुद्भव आहे. ह्या लक्षणांमध्ये प्रधान लक्षणे कोणती ती रुग्णानुसार ठरवून ज्वर, कास, श्वास याची चिकित्सा करावी. ज्वरामध्ये आधी लंघन, नंतर पाचन व शेवटी रेचन हे सूत्र वापरावे. ज्वरघ्न, कासहर व श्वासहर औषधे वापरावीत. संतर्पणजन्य व्याधीसाठी अपतर्पण उपाय करावेत व अपतर्पणजन्य व्याधीसाठी संतर्पण उपाय करावेत. अपतर्पण चिकित्सेत लंघन, लंघनपाचन व दोषावसेचन ही चिकित्सा करावी. ज्वर असेल तर आमपाचनासाठी लंघन, उष्णोदक पान करावे. लघु आहार देऊन लंघन करता येते. यामध्ये मुद्ग यूष (हिरव्यामुगाचे कढण), पेया, यवागु, (तांदळाची दाट/पातळ पेज), कृशरा (तांदुळ व मुग डाळ यांची खिचडी), लाजा मंड यांचा वापर करावा. ज्वर हा आमाशयसमुत्थ व्याधी आहे म्हणून उष्णोदक (गरम पाणी) उपयुक्त आहे. गरम पाणी हे अनुलोमक, वात-कफनाशक, पाचन व बस्तीशोधन आहे. पिताचा अनुबंध असताना दाह, प्रलाप, भ्रम, अतिसार ही लक्षणे असताना उष्णोदका ऐवजी शूतशीत जल (गरम करून गारकेलेले पाणी) उपयुक्त ठरते. प्राणवहस्त्रोतसाची चिकित्सा करताना मूलस्थानांचे संरक्षण महत्त्वाचे आहे. येथे श्वासकृच्छ्रता हे लक्षण बहुतेक रुग्णांमध्ये दिसत असल्याने फुफ्फुसांचे व हृदयाचे संरक्षण

करणा-या औषधांचा, क्रियांचा उपयोग करणे उपयुक्त आहे. **शामन चिकित्सा-** या लक्षणांमध्ये उपयुक्त वनस्पती द्रव्यांमध्ये- कंटकारी, वचा, पिप्पली, यष्टीमधु गुडुची, शुंठी, मुस्ता, धन्वयास, पुष्करमूळ ही एकेरी किंवा संयुक्त चूर्ण, क्वाथ ह्या औषधी कल्पनांच्या माध्यमातून वापरता येतील. संयुक्त चूर्णांमध्ये- सितोपलादि, तालीसादि, महासुदर्शन चूर्ण इ., क्वाथकल्पनेमध्ये- नागरादि क्वाथ उपयुक्त आहे (नागरं पौष्करं मूलं गुडुची कंटकारिका। सकासश्वासपाश्वार्ती वातश्लेष्मोत्तरे ज्वरे।। अष्टांगहृदय ज्वर चिकित्सा १।६६), महासुदर्शन क्वाथ ज्वरघ्न व पाचन म्हणून उपयोगी आहे.

**खल्वी कल्पांमध्ये** - त्रिभुवनकीर्ती, पारिजातकगुटी, सूक्ष्मत्रिफळा, कफकेतुरस, सूतशेखर, श्वासकुठार, महाज्वरांकुश इ., **कुपीस्थ कल्पांमध्ये-** रससिंदुर, समीरपन्नग, मल्लसिंदुर इ. कल्पांचा अवस्थेनुसार उपयोग करावा. महालक्ष्मीविलास, बृहत्वात चिंतामणि, हेमगर्भ इ.चा आत्यधिक अवस्थेत उपयोग करावा. अनुपानामध्ये उष्णोदक, आर्द्रक स्वरस, मधु यांचा यथायोग्य वापर करावा. आयुर्वेदात औषधी संपदा भरपूर सांगितली आहे. योग्य निदान करून योग्य औषधाची निवड करता येईल. क्वारंटाईन व्यक्तींना किमान लक्षणे निर्माण होऊ नयेत म्हणून किंवा निर्माण झालीच तर त्याची तीव्रता कमी व्हावी या उद्देशाने प्रतिबंधक म्हणून यातील औषधे द्यावीत.

**शोधन चिकित्सा** - जनपदोद्ध्वंसक व्याधीच्या चिकित्सेमध्ये लक्षणानुसार औषधी चिकित्से व्यतिरिक्त पंचकर्म करावेत. रुग्णाच्या बलानुसार, लक्षणानुसार वमन, विरेचन, अनुवासन बस्ती, आस्थापन बस्ती किंवा शिरोविरेचन करावे. पंचकर्मांमुळे दोष शोधन होते. कावारंटाईन व्यक्तींना बल पाहून शोधन करावयास पाहिजे.

पंचकर्मानंतर रसायन औषधांचा उपयोग करावा. व्याधीनाशन, व्याधी प्रतिकार शक्ती वाढवणे हा रसायन औषधांचा उद्देश आहे. सध्या क्वारंटाईन केलेल्या व्यक्तींना ज्यांना अजून व्याधीची लक्षणे दिसली नाहीत अशांसाठी रसायन औषधांचा उपयोग करणे जेणेकरून व्याधीचा प्रतिबंध होऊ शकेल. यामध्ये गुडुची, आमलकी, पिप्पली, शुंठी, यष्टीमधु या द्रव्यांचा प्राधान्याने उपयोग करावा. गुडुची घनवटी, संशमनी वटी, वर्धमान पिप्पली रसायन, च्यवनप्राश, शुंठी सिद्ध क्षीर यांचा समावेश होतो.

२) **दैवव्यपाश्रय चिकित्सा** - युक्तीव्यपाश्रय चिकित्से व्यतिरिक्त ग्रंथकार दैवव्यपाश्रय चिकित्सेचा उपयोग करायला सांगतात. ह्यामध्ये जप,इष्ट देवतेचे पूजन (धर्मानुसार देवतेचे पूजन, चिंतन, स्मरण, प्रार्थना अपेक्षित आहे). मंगल अश्या मणि,रत्न यांचे धारण करायला सांगतात. ह्याचा अभ्यास ज्योतिषाच्या माध्यमातून राशीनुसार करावा.

३) **सत्वावजय चिकित्सा** - यामध्ये सत्य भाषण, सत्याच्या

मार्गाने काम करणे, प्राणीमात्रांवर दया (विविध स्वरूपात मदत करणे), यथाशक्ती दान करणे (धन, अन्न, वस्त्र, वस्तु यांचे दान करणे), जनपदोद्ध्वंसामध्ये अनेक संस्था, व्यक्ती या दान करण्यास पुढे येतात, राष्ट्रीय पातळीवर, राज्य पातळीवर दान करण्याचे आवाहन करण्यात येते. सदवृत्ताचे नियम पाळावेत. जसे- अहिंसा, सत्य, अस्तेय (चोरी न करणे), ब्रह्मचर्य पालन, व्यभिचार टाळणे, दुस-याशी वागणूक ही पशुप्रमाणे नसावी, कठोर भाषण करू नये. दुस-याची वस्तु, जागा, भौगोलिक प्रदेश हडपण्याचा प्रयत्न करू नये. कायिक, वाचिक, मानसिक दृष्ट्या या सर्व विषयांचे पालन करावे. तसेच धर्मशास्त्राच्या कथा ऐकाव्यात/पहाव्यात. (उदा. रामायण, महाभारत), जिथे जीवन सुखकर आहे अश्या गावामध्ये, शहरामध्ये, नगरामध्ये रहावे. जितेंद्रिय महर्षींची सेवा करावी, पूजन करावे, सात्विक वृत्ती असणा-यांशी मैत्री करावी व अशा व्यक्तींच्या संपर्कात रहावे.

अष्टांगहृदय या ग्रंथात सदवृत्त प्रकरणात ग्रंथकार सामाजिक नियम सांगतात- शिकताना, हसताना, जांभई देताना तोंडावर हात ठेवावा किंवा तोंडावर आच्छादन ठेवावे. (रुमाल इ.) आत्ता मास्क पण वापरण्यास सांगितले जाते. तसेच नासिका, गल, कर्ण, दंत, अक्षि विवर यातील मल समाजात वावरताना काढू नयेत. आज सांगतात ते रेस्पायरेटरी हायजिन येथे सांगितले आहे.

वरील सर्व उपाय हे ज्या काळात जनपदांचे आरोग्य मोठ्या संख्येने बिघडते व जिथे मृत्युची अनिश्चितता असते त्या काळात आयुष्य रक्षण करण्याचे उपाय आहेत. चरकसंहिताकार ह्या काळात नियत व अनियत आयुष्याचे विवेचन करतात. ह्या युगात आयुष्याचे सर्वाधिक मान शंभर वर्षे आहे. नियत आयु म्हणजे कालानुसार होणारा मृत्यु होय. अनियत आयुमध्ये अकाल मृत्यु घडताना दिसतो. ह्याची दोन कारणे आहेत- दैव (भाग्य) व पुरुषकार (मनुष्याचे कर्म). दैव व पुरुषकार बलवान असतील तर नियमाने सुखपूर्वक दीर्घायुष्य प्राप्त होते. दोन्हीचे बल कमी असेल तर ते दुःख पूर्वक अल्प आयुष्याचे कारण ठरते. दोन्हीचे बल मध्यम असताना आयुष्य हे सुक किंवा दुःखपूर्वक मध्यम असते. दुर्बल भाग्याला बलवान कर्म नष्ट करते व दुर्बल कर्माला बलवान भाग्य नष्ट करते व नियत आयुष्य प्राप्त होते.

जनपदोद्ध्वंसामध्ये मृत्यु ही अनिश्चित आहे. कोणाला मृत्यु ओढवेल व कोणाला नाही हे सांगणे अवघड आहे. ही जनपदोद्ध्वंसाची तत्त्वे विचारात घेऊन उद्भवलेल्या रोगाचा प्रतिबंध व उपचार आयुर्वेदानुसार करता येईल.

**संदर्भ** - १) **चरकसंहिता** - चक्रपाणी आयुर्वेद दीपिका टिकेसह, चौखंबा प्रकाशन. २) **सुश्रुतसंहिता** - डल्हन निबंधसंग्रह टिकेसह, चौखंबा प्रकाशन. ३) **अष्टांगहृदय** - अरुणदत्त सर्वांगसुंदर व हेमाद्री आयुर्वेद रसायन टिकेसह, चौखंबा प्रकाशन. ४) **भावप्रकाश**.





## Preventive Aspects Of Noise Induced Hearing Loss

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**Introduction** - As per ayurveda, human body (sharir) is made up of prakruti which is ultimately made of panchamahabhuta and mana. Each mahabhuta is separate representative of each sense organ. Out of 5 special senses, akash mahabhuta and pruthvi mahabhuta are representative of shraavanendriya. Shraavanendriya is most important not only for hearing but also for balance.

**Historical Background** - In the era of vedas and mahabharata, people used to make loud shankhanaad, which might be harmful for ears. Later, noise explosion was noted at the time of world wars. Noise causing harm to ears also noted at industrial /mine workers. Nowdays, we are suffering from the noise pollution by vehicles, DJ's, loud speakers, headphones etc. As per different types of prakruti, capacity of hearing varies from person to person. Noise pollution, can convert temporary threshold shift to permanent threshold shift. Ayurvedic management is more encouraging to prevent it, Exposure to loud sound, damage happens to the INNER EAR hair cells found inside the cochlea. These cells respond to mechanical sound vibrations by sending an electrical signals to the auditory nerve. Over time, hairs like stereo cillia may get damaged or broken. If enough of them are damaged hearing loss results. Every year, approximately millions of people in the World wide are exposed to hazardous noise. Loud noise can also create physical and psychological stress, reduce productivity, interfere with communication and concentration, and contribute to workplace accidents and injuries by making it difficult to hear warning signals.

**Aim-** To study the conceptual study of

preventive aspect of noise induced hearing loss.

**Material and Methods** - Various Ayurvedic Manuscripts have been used for this study as per source material. Apart from this online databases, relevant books also used for literary review.

**Conceptual Study** - Why should one concentrate on noise induced hearing loss?

Noise related hearing loss has been 16% of permanent hearing loss due to high workplace noise levels and 7 to 21% in various sub regions

**Signs And Symptoms Of Noise Induced Hearing Loss -**

- Difficulty in hearing
- Loss of audibility overall decrease in volume
- Distortion or clarity loss due to selective frequency loss- e.g. discrimination of vowels and consonants.
- PTS • TTS • Tinnitus • Otagia
- Hyperacusis • Dizziness and vertigo

What can be done to reduce the hazards from noise?

Noise controls are the first line of defence against excessive noise exposure. The aims of these controls should aim to reduce the hazardous exposure to the point where the risk to hearing is eliminated or minimized

What can be done to prevent NIHL as per ayurveda?

• Karnabadhriya is one of most important and common karnaroga explained by acharya sushruta and acharya vagbhata. Hearing loss is either due to the disturbance of vata dosha alone or vitiation of vata kapha together.

• As per ayurveda, avashyay (cold), jalakreeda (swimming), and vardhakya (senility) are the main etiological factors, which results in the vitiation of vata and kapha dosha.



• Vata vitiation can result in damage to the auditory nerve and nerve endings, which can lead to hearing loss and ringing in the ears. When kapha is vitiated, the result is of obstruction of sound pathway.

Finally disturbance of vata as well as kapha can affect auditory nerve resulting in degeneration of end organ of hearing or obstruction to the flow of nerve impulse

Preventive aspects of noise induced hearing loss.

Acharya sushruta has mentioned a common line of treatment for the karnarogas- **samanyam karnarogeshu ghrutapanam rasayanam | avyayamo ashirsosnanam brahmacharyam akathhanam | | sushrut.u.21/3**

**Ghrutapanam** - The sushruta samhita, claims ghee is beneficial for whole body and recommends it as the ultimate remedy for problems stemming from vata dosha. Moderns science tells us that ghee also harbors phenolic antioxidants which bolsters immune system. Ghee also contains known vitamin E and beta carotene which are known antioxidants.

**Rasayanam** - Rasayan chikitsa is one of the most important branch of ayurveda. Helps to maintain healthy life style. As per ayurveda, rasayana improves immunity and perform many vital functions of human body. Many herbs and dietary materials can act as rasayan and work as immune stimulant, antioxidant, adoptogenic and anti stress agents etc. Rasayanas are also known to have vitamin C. Vitamin E, beta carotene, riboflavin and other important phytoconstituents. These properties ultimately improves the pure blood circulation and also decreases the oxidative stress on the hair cells caused due to noise induced hearing loss.

**Avyayam** - Exercise as per ayurveda aggravates the vata dosha. So it is a apathya vihara in karnaroga. Heavy exertion , such as straining while lifting wights, causes intracranial pressure, which in turn leads to pressure within the ears. Heavy exertion

paired with loud music can lead to hearing loss or tinnitus. The tear itself can be caused by the pressure in the inner ear due to straining, hearing changes occurs.

Ashirsnanam , Akathhanam and Abramhachraya palanam are advised as they leads to aggravation of vata dosha, which can lead to karnabadhriya samprapti.

**Yogasana** - Pranayam and various yogasanas can helps to prevent the hearing loss as pranayam helps to improve blood circulation by increasing oxidation which ultimately reduces the oxidative stress on the hair cells.

**Karnapooranam** - As the root cause of karnagat rogas lies in the shabdavaha srotas and the dosha involved is vatadosha., hence treatment of choice is karnapuranam.

Yogratnakar states that "puranam katutailam hitam vataghnavech."

Karnapuranam does the vatashaman and maintains the normal hearing capacity., as quoted by acharya charaka-

"Na karnarogaa vatotthaha... Nochchai shrutihi na badhiryam syannityam karma tarpanaat'.

**Result** - As oxidative damage, inflammation and neuroprotection are critical factors in hearing health. Ghrutapanam, Rasayanam includes a spectrum of dietary and endogenous antioxidants and their derivatives plus additional necessary micronutrients and minerals.

**Conclusion** - So these preventive aspect explained in ayurveda may help to prevent noise induced hearing loss.

**References** - 1) Sushrita Shahrir Sthana-

2) Chaukhamba Sanskrita Sansthana, Kaviraja Ambikadatta Shastri, Shushruta Samhita Uttartantra - 20/8 Page No- 116

3) Chaukhamba Sanskrita Sansthana, Kaviraja Ambikadatta Shastri, Shushruta Samhita Uttartantra - 20/8 Page No-116

4) Chaukhamba Sanskrita Sansthana, Kaviraja Ambikadatta Shastri, Shushruta Samhita Uttartantra - 20/1-2 Page No-112

5) Chaukhamba Sanskrita Sansthana, Kaviraja Ambikadatta Shastri, Shushruta Samhita Uttartantra - 21/3 Page No-127 6) Yogaratnakar -





## Phytochemical, Pharmacological And Ayurvedic Review Of Antiviral Effects Of Medicinal Plants With Special Reference To Herbal Interventions For SARS Co V 2

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**Introduction** - Novel Corona Virus 2 is a causative organism for disease COVID -19, also called as Severe Acute Respiratory Syndrome Corona Virus - 2 (SARS CoV 2). It has been declared as a pandemic (Janapadodhwansa) by WHO on March 11, 2020.<sup>(1)</sup>

Till date, lot of researches are going on to find the solutions either to cure or control this virus. Many laboratory as well as clinical trials are going on, specially antivirals, immunomodulation formulas and vaccines are under evaluation with proper Infection-Prevention and Control (IPC) guidelines from WHO. At this time, there are no well known Medicines, Antivirals, Nutrients, Herbal Supplements or vaccines to prevent, treat, or cure COVID-19.

Expert group from WHO had also recommended that it was ethical to offer unproven interventions, as yet unknown efficacy and adverse effects, as potential treatment or prevention, vaccine or anti-viral were not available."<sup>(2)</sup>

The signs and symptoms of COVID 19 described till date were compared with respiratory disorders illustrated in Ayurved. Its progress is divided in stages according to the symptoms recorded in research papers. These stage were associated with the antiviral effects of some medicinal plants to define a proposed combinations of some plants. And the immune modulation effects of these plants were discussed for their efficacy in this disease.

**SARS CoV 2 information** : This COVID virus is closely related to the SARS virus up to 95%.<sup>(3)</sup>CoV are positive-stranded RNA viruses with a crown-like appearance due to the presence of spike glycoproteins on the envelope. SARS-CoV-2 belongs to the beta CoVs category. CoVs are enveloped, positive-stranded RNA viruses with nucleocapsid. In CoVs, the genomic structure is organized in a +ssRNA. Starting from the viral RNA, the synthesis of polyprotein 1a/1ab (pp1 a/pp1ab) in the host is realized. The transcription works through the replication-transcription complex (RCT) organized in double-membrane vesicles and via the

synthesis of subgenomic RNAs (sgRNAs) sequences. Transcription termination occurs at transcription regulatory sequences, located between the so-called open reading frames (ORFs) that work as templates for the production of subgenomic mRNAs. In the atypical CoV genome, at least six ORFs can be present. Among these, a frameshift between ORF1a and ORF1b guides the production of both pp1a and pp1ab polypeptides that are processed by virally encoded chymotrypsin-like protease (3CLpro) or main protease (Mpro), as well as one or two papain-like proteases (Plpro) for producing 16 non-structural proteins (nsps). Apart from ORF1a and ORF1b, other ORFs encode for structural proteins, including spike, membrane, envelope, and nucleocapsid proteins and accessory proteic chains. Different CoVs present special structural and accessory proteins translated by dedicated sgRNAs. Pathophysiology and virulence mechanisms of CoVs, and therefore also of SARS-CoV-2 have links to the function of the nsps and structural proteins. For instance, research underlined that nsp is able to block the host innate immune response. Among functions of structural proteins, the envelope has a crucial role in virus pathogenicity as it promotes viral assembly and release. Among the structural elements of CoVs, there are the spike glycoproteins composed of two subunits (S1 and S2). Homotrimers of S proteins compose the spikes on the viral surface, guiding the link to host receptors. The spike receptor-binding domain presents only a 40% amino acid identity with other SARS-CoVs.<sup>(4)</sup>

The infection is mediated by the viral receptor on human cell membranes Angiotensin Converting Enzyme (ACE2), which is a key component in RAS signalling.<sup>(5)</sup>

The data so far available seem to indicate that the viral infection is capable of producing an excessive immune reaction in the host. In some cases, a reaction takes place which as a whole is labelled a 'cytokine storm'. The effect is extensive

tissue damage. The protagonist of this storm is interleukin 6 (IL-6). IL-6 is produced by activated leukocytes and acts on a large number of cells and tissues. It is also implicated into the pathogenesis of the cytokine release syndrome (CRS) that is an acute systemic inflammatory syndrome characterized by fever and multiple organ dysfunction. The clinical spectrum of COVID-19 varies from asymptomatic or paucisymptomatic forms to clinical conditions characterized by respiratory failure that necessitates mechanical ventilation and support in an intensive care unit (ICU), to multiorgan and systemic manifestations in terms of sepsis, septic shock, and multiple organ dysfunction syndromes (MODS)<sup>(6)</sup>

It is stated that the flu infection often leads to a vigorous immune response and body-wide inflammation, leading to the hallmark symptoms of high fever, cough, headache, muscle and joint pain, and severe fatigue. However, when the inflammation becomes excessive, driven by the overproduction of inflammatory mediators called cytokines, this "cytokine storm" can rapidly kill cells, causing severe tissue damage while precipitating organ dysfunction and failure, particularly of the lungs, kidneys, and circulatory system. It is life-threatening, even for already hospitalized patients. Immunomodulatory therapy has been proposed as a possible way to improve the outcome, with or without antiviral agents.<sup>(7)</sup>

Recent study revealed that some ORFs bind porphyrin, some attacks heme on haemoglobin to dissociate iron from porphyrin leading to lesser haemoglobin to carry oxygen and carbon di oxide. This will cause severe inflammations resulting in ground-glass-like lungs. It also causes high ferritin levels in blood.<sup>(8)</sup>

The another study states that, the very severe cases of the coronavirus are associated with a clinical picture similar to that of the macrophage activating syndrome (MAS), which is unsurprisingly associated with high levels of ferritin. Therefore, the enigma regarding the high mortality rate associated with COVID-19 is most probably explained by a cytokine storm.<sup>(9)</sup> Which also indicates plants increasing oxygen carrying capacity will be beneficial along with iron chelation to reduce overload of iron from ferritin in blood.

The very severe cases of the coronavirus are associated with a clinical picture similar to that of the macrophage activating syndrome (MAS), which is unsurprisingly associated with high levels of ferritin. Therefore, the enigma regarding the high

mortality rate associated with COVID-19 is most probably explained by a cytokine storm.<sup>(9)</sup>

So, we may consider here that ORF inhibitors are first important to prevent from respiratory symptoms. anticytokinic therapy<sup>(10,11,12)</sup> will help to reduce mortality rate, also, drugs which help to chelate high ferritin from blood are also needed in conditions like macrophage activating syndrome.

The challenging study revealed in one scientific paper that Low ACE2 levels, in principle, depress the risk of a viral invasion since the depletion of viral receptor binding sites; on the other hand, one should keep in consideration that such predispositions were indeed revealed in occurrence of injuries triggered by the negative action on the ACE2-ANG(1-7) axis of the RAS signalling. Some questions therefore arise: who will play the major role in the viral attack? The decrease in viral receptor binding site, the presence of preceding injuries, or the medical care that was provided to overcome the injuries and the poor ACE2 content?<sup>(5)</sup> So antiviral therapy by blocking its own receptor can be more safer remedy.

**Methodology :** Proposed Review for Antiviral Agents

**Existing research :** Many of scientists have donemolecular docking of anti-viral drugs with specific virus targets to block the receptors by using bioinformatics and computational tools.<sup>(13)</sup> It has been stated that new technological developments also impact how researchers conduct preclinical studies on compounds with antiviral activity. Genomic sequencing of drug resistant viruses can be faster than conducting conventional marker transfer studies to identify the molecular targets of investigational drugs (S. W. Chou, pers. commun.)<sup>(14)</sup>

**Antiviral drugs Selection from Previously reported**

**Molecular Docking** - All the active principles chosen here with their specific antiviral activity reported after docking done by different scientist were tabulated and their natural resources were searched by doing wide review of other research article and authentic books. The natural resource found were filtered to select those plants which are precisely described in Ayurvedic texts for their specific action on Respiratory system. The natural origins of these researched molecules from Indian resources have been documented here in tabular form with their suggested actions by researchers.(See Table No 1)

All these plants resourced on basis of possessing target molecules are precisely selected

only after knowing their Ayurvedic utility in Respiratory system disorders and use in immunomodulation.

**The most important plants selected here from Ayurvedic resource which contain important antiviral molecules are listed here -**

**Shyonak-** Oroxy lumindicum (L) Vent. (Bignoniaceae)

**Musta** - (Cyperusrotundus Linn). Cyperaceae  
Kalamegh (Andrographis paniculata (Burm F.) Wall. Ex. Nees) Acanthaceae

**Bhurja** - (Betula utilis D. Don) Betulaceae  
Kiratatikta (Swertiachirata) Gentianaceae

**Bilva** - (Aegle marmelos (Linn) Correa ex Roxb) Rutaceae

**Nirgundi** - (Vitex negundo Linn) Verbenaceae  
Amalaki (Phyllanthus emblica Linn.) Euphorbiaceae

**Haritaki**- (Terminalia chebula, Retz.) Combretaceae

**Haridra**-(Curcuma longa Linn.) Zingiberaceae

**Karkatshrungi**- (Pistacia integerrima, Stuart ex Brandis) Anacardaceae

**Ashwagandha**- (Withaniasomnifera L. Dunal) Solanaceae

**Supportive researches reciting uses of these plants in respiratory system diseases and antiviral activities.**

**Shyonak** - Oroxylumindicum (L) Vent.

Baicalin possess a potent inhibitory activity against viruses - It exerts its anti-influenza activity by modulating viral protein NS1-mediated cellular innate immune responses<sup>(18)</sup>

**Musta** - Cyperusrotundus Linn  
cytotoxicity Moderate antigen secretion<sup>(15)</sup>  
moderate activities against HBsAg secretion / The anti-HBV activity and cytotoxicity<sup>(19)</sup>

Kalamegh And rographispaniculata (Burm F.) Wall. Ex. Nees

HMPL-004 acts on multiple cellular targets in the inflammatory signal transduction pathways resulting in suppressed inflammation cytokine expression including TNF- $\alpha$ , IL-1 $\beta$  and IL-6. HMPL-004 was demonstrated to inhibit TNF- $\alpha$  and IL-1 $\alpha$  production in cell-based assays. HMPL-004 is also able to inhibit NF- $\kappa$ B activation. NF- $\kappa$ B is a family of transcriptional factors that regulate a wide spectrum of genes critically involved in host defence and inflammation. The mechanism of action of HMPL-004 was further supported in laboratory IBD animal models. Treatment of IBD rats with HMPL-004 caused a significant drop in plasma cytokine concentrations, including TNF- $\alpha$  and IL-1 $\alpha$ .<sup>(20)</sup>

Strongly inhibited proinflammatory cytokines /

chemokines expression.

Results demonstrated that DAP could restrain both the host intense inflammatory responses and high viral load<sup>(21)</sup>

**Bhurja** - Betula utilis D. Don

The active constituents of Betula utilis obtained from the plant shows anticancer, anti-inflammatory, anti HIV, antioxidant and antibacterial activity.<sup>(22)</sup>

**Kiratatikta** - Swertiachirata

Methoxyxanthone exhibited significant inhibitory activity on HBV DNA replication<sup>(23)</sup>

Swertiachirata extract inhibited viral dissemination It showed antiviral properties against Herpes simplex virus type-1.<sup>(24)</sup>

**Bilva** - Aeglemarmelos (Linn) Correa ex Roxb  
 $\alpha$ -glucosyl hesperidin was shown effective as an antiviral, through the blockage of influenza virus replication by the inhibition of viral sialidase needed for viral penetration and egress<sup>(25)</sup>

Direct viral testing of RTV by GH in cell-free suspension using the qEIA showed a loss of viral capsid antigen/integrity<sup>(26)</sup>

Rutin significantly inhibited specific airway resistance and immediate-phase response along with reticence of histamine, phospholipase A2 and eosinophil peroxidase and pharmacological activities includes- antioxidant, cytoprotective, vasoprotective, anticarcinogenic, neuroprotective and cardioprotective activities<sup>(27)</sup>

**Nirgundi** - Vitex negundo Linn

against the reverse transcriptase (RT) enzyme. the flavonoids have anti-microbial activity, particularly the antiviral. & substances closely related to flavonoids inhibit the fusion of the viral membrane with that of the lysosome<sup>(28)</sup>

**Amalaki** - Phyllanthusemblica Linn.

Pentagalloylglucose can inhibit Influenza A virus replication by prevention of virus adsorption and suppression of virus release.<sup>(29)</sup>

**Haritaki** - Terminalia chebula, Retz.

A large number and a wide variety of pathogens, including viruses, bacteria, parasites and fungi, also subvert GAGs for virtually all major steps of pathogenesis.

Cell surface GAGs also serve as co-receptors by increasing the local concentration of pathogens so that they can interact more efficiently with their entry receptors.

Several engineered GAG mimetics, sulfated compounds, cationic compounds, GAG-digesting enzymes, and selective knock-down of GAG biosynthetic enzyme or proteoglycan core protein genes have been shown to effectively inhibit

Table 1: Researched Molecule selected with their particular antiviral action through Inhibition of specific receptors and their Natural resources from Ayurved

<b>Described action on Virus (15)</b>	<b>Previously Researched Molecule (15)</b>	<b>Ayurvedic Medicinal Plant Source</b>	<b>Nature of Molecule</b>
PLpro Inhibitors	Baicalin	Shyonak Oroxylumindicum (L) Vent. Bignoniaceae	Flavonoids
PLpro Inhibitors	sugetriol-3,9-diacetate (exhibited high binding affinity to PLpro protein)	<b>Musta</b> - Cyperusrotundus Linn Cyperaceae	sesquiterpenoids
3CLpro Inhibitors RdRp (Nsp12) Inhibitors	Andrographolide (peptide inhibitors and small-molecule inhibitors) Didehydro and rographolide	<b>Kalamegh</b> - Andrographis paniculata (Burm F.) Wall. Ex. Nees Acanthaceae	Labdane diterpenoid  Labdane diterpenoid
3CLpro and RdRp (Nsp12) inhibitors	Betulonal	<b>Bhurja</b> - Betula utilis D. Don Betulaceae	pentacyclic triterpenoid
RdRp (Nsp12) Inhibitors 3CLpro Inhibitors Helicase (Nsp13) Inhibitors ACE 2 inhibitors	Methoxyxanthone  triptexanthoside D  Deacetylcentapicrin  kouitchenside	<b>Kiratatikta</b> - Swertiachirata Gentianaceae	xanthenes
3CLpro Inhibitor Helicase (Nsp13) Inhibitor Binding interface between Spike and ACE2 Helicase (Nsp13) Inhibitor	Hesperidin, Neohesperidin   Rutin (Vit P)	<b>Bilva</b> - Aegle marmelos (Linn) Correa ex Roxb Rutaceae	Glycosides bioflavonoids  (parts of the vitamin C complex)  flavonoid glycoside
Helicase (Nsp13) Inhibitor	Homovitexin	<b>Nirgundi</b> - Vitex negundo Linn Verbenaceae	Flavone Glucoside
Helicase (Nsp13), ACE2 inhibitor	Phyllaemblicin B and Phyllaemblinol Pentagalloylglucose Phyllaemblicin G7	<b>Amalaki</b> - Phyllanthus emblica Linn. Ephorbiaceae	Alkaloids
GAGs Inhibitors (16)	Chebolic acid	<b>Haritaki</b> - Terminalia chebula, Retz. Combretaceae	ellagitannins
3CLpro Inhibitors	Curcumin	<b>Haridra</b> - Curcuma longa Linn. Zingiberaceae	Natural Phenols
3 CLpro inhibition	Rhusflavanone	<b>Karkatshrungi</b> - Pistaciaintegerrima, Stuert ex Brandis Anacardaceae	Flavonoids
Immune Modulation Binding free energies of ACE2 and Spike prote in receptors Binding domain(17)	withanolides, withaferins and saponins	<b>Ashwagandha</b> - Withaniasomnifera L. Dunal Solanaceae	Steroids and steroidal lactone

infection in cell-based and pre-clinical animal models. Rotavirus also uses GAGs to promote the activity of its enterotoxin NSP4.<sup>(30)</sup>

Chebularic acid and punicalagin displayed broad-spectrum antiviral effects in a dose-dependent manner. Both compounds exhibited significant inhibitory effect on enveloped viruses known to engage GAGs for infection.<sup>(31)</sup>

Glycans of glycolipids, glycoproteins and proteoglycans are utilized by a wide variety of viruses, representing several families of enveloped as well as non-enveloped viruses.<sup>(32)</sup>

**Haridra** - *Curcuma longa* Linn

Entry and Attachment Inhibitors, Curcumin is able to inhibit virus entry and HA. It also has antioxidant, anti-inflammatory, anticancer, antiviral, antibacterial and antidiabetic properties, among others. Curcumin acts against a large array of targets. Curcumin is also active against other viruses.<sup>(33)</sup>

**Karkatshrungi** - *Pistacia integerrima*, Stuart ex Brandis.

Rhusflavanone demonstrated inhibitory activities against influenza B, measles, and HSV-2 viruses.<sup>(34)</sup> Flavonoids exert their activity by blocking RNA synthesis, protease inhibition, reverse transcriptase as well as direct inhibition of viruses.<sup>(35)</sup>

**Ashwagandha** - *Withaniasomnifera* L. Dunal

Cytopathic Effect Reduction Assay: Antiviral activity of WS root extract was determined by reduction of virus titre.<sup>(36)</sup>

Sitoinosides and acylsterylglucosides in Ashwagandha are anti-stress agents. Active principles of Ashwagandha, for instance the sitoinosides VII-X and Withaferin-A, have been shown to have significant anti-stress activity against acute models of experimental stress.<sup>(37)</sup>

Many of its constituents support immunomodulatory actions.<sup>(38)</sup>

Other triterpenoids, such as the saponins and uralsaponins M-Y from the roots of *Glycyrrhiza uralensis*, exhibit anti-influenza and anti-HIV activities. Moreover, saponins can be used as vaccine adjuvants and modulate the expression of cytokines and chemokines. Further triterpenoid derivatives share broad antiviral actions.<sup>(39)</sup>

Natural phytochemicals could well be the viable options for controlling COVID-19 entry into host cells, and *W. somnifera* may be the first choice of herbs in these directions to curb the COVID-19 infectivity.<sup>(40)</sup>

**Ayurvedic Properties of Resourced Plants**<sup>(41,46)</sup>

These selected plants are proposed for stage wise uses in Covid 19 by their evaluation on Ayurvedic

properties. These properties are tabulated with their Ayurvedic Pharmacodynamics and Classes of important actions (Gana). (See Table No 2)

**Important Actions, useful parts & dosages of medicinal plants** - The important actions on respiratory system are also tabulated with information regarding their useful part from where maximum extraction of active principle can be done. The common dosages of raw powders of useful part suggested in texts are also noted in same table. (See Table no 3)

**Important Viral Receptors reviewed for Inhibition effect.**

The main actions of antiviral activity of selected molecules is mainly either by inhibition of PLpro, 3CLpro, RdRp, Helicase receptors from virus and ACE 2 receptors from host. As the many viruses also engage GAGs (Glycosaminoglycans) for infection by forming protein - protein complexes. Cell surface GAGs also serve as co-receptors by increasing the local concentration of pathogens, so that they can interact more efficiently with their entry receptors. Considering this part the GAG inhibitor plants having Ayurvedic utility in respiratory diseases were also considered here for antiviral action to increase potency of a proposed therapy.

**Importance of Immune Modulation in Viral infections** - Ayurved aims to prevent as well as to cure the disease. There are recommendations to increase immunity prior to infection as well as to protect the strength and rejuvenate the system after the infection. So considering this fact some molecules were also selected which (Plant resource) acts as immunomodulator according to Ayurvedic views and which were also justified on bases of modern research.

**Formulation Criteria** - After selecting most potent medicinal plants they were formulated together by Ayurvedic laws of pharmacotherapeutics. For this purpose the known formulations described in Ayurvedic texts were also reviewed. The plants utilised either in combination or singular way were also reviewed and analysed from Charak Samhita Chikitsa Sthan chapters of treatments for Hikka Shwas Chikitsa (Hiccough, Asthma Treatment) and Kasa Chikitsa (Cough treatment), chapter number 16 and 17.<sup>(41)</sup> This analysis added more help to formulate stage wise combinations. For this specific protein inhibition according to stages of COVID 19 symptoms were analysed (point 6 and 7) with herbal combination and their justification is elaborated in point 9.

**COVID 19 Symptoms and Ayurvedic terminology -** COVID 19 symptoms were co related with Ayurvedic diagnosis to understand its Ayurvedic Etiopathology on bases of reported signs and symptoms from the published research papers and WHO portals.

**Symptoms associated with disease :**

Fever (Jwara) , Cough (Kaasa), Myalgia (Anga Marda), Fatigue (Tandra), Head Ache (Shiro Ruja),

**With all above, some got Pneumonia like symptoms (Shwasanakjwar) with few more indicators as -**

Dry cough (Vaatajkaasa), Anorexia (Aruchi), Dyspnoea (Shwaasa), Sputum production (Kaphajakaasa),

**In some other articles, the main clinical features suggested are:**

Fever (Jwara), Cough (Kaasa), Shortness of breath (Shwaas).

**If the situation aggravated, patient shows more symptoms as -**

Laboured breathing (Sakashtashwa), Pain or pressure in the chest (Uroshool), Loss of consciousness (Saudnyanaasha), Cyanosis (Angashyavata), Diarrhoea (Atisaara), Nausea (Chardi),

In some cases respiratory distress caused death even after subsiding fever.

Recently published scientific article on “Clinical Characteristics of Covid-19 in NewYork City” suggests that Gastrointestinal Symptoms were appeared more common in patients from USA than in China.<sup>(42)</sup>

**The further course of disease can be co related as follows -** High Pitta intervention causes fever with disturb metabolism and depletion of body tissues (Dhatu Kshay) which Results in to systemic debility (OjoVikruti) leading to Sepsis (DhaatuPaaka / SrotasPaak) and eventually septic shock (Cheer Dosh Paak).

With all these symptoms it can be corelated with Samsargajjwar having Kaphavata predominance with pitta association. Which after aggravation leads to Sannipatajwar.

Sannipatajwar has already been corelated with Sepsis/septic shock / systemic inflammatory response syndrome (SIRS) / multiple organ dysfunction syndrome (MODS) (43)which also explains the theory of 'cytokine storm'<sup>(6)</sup>

**Stage wise Interventions with Herbal Medicines -** All these pathological signs and symptoms can be divided in specific stages to understand the progress of disease and its probable stage wise

herbal interventions. Early inhibition of Virus can protect from further severe conditions. Here are some assumptive stagewise formulations suggested after reviewing virus conduct.

**Stage 1**

● A Samsargajjwar (Kapha-vaata Pradhan)

Therapeutic recommendations : Kapha Vata Pacification, Controlling fever and Cough

Suggested Herbal Intervention -

**Formula a)** Bilvapatra, Shrunji, Musta, Kalamegha, HaritakiYog (Combination)

● B Samsargajjwar (Kapha - Vaata Dominance) with Pittaintervention

Therapeutic recommendations: KaphaVata Pitta Pacification, Controlling fever and Cough

Suggested Herbal Intervention -

**Formula b)** Bilvapatra, Shrunji, Musta, Kiratatikta, haridra Yog

**Stage 2**

Aggravation of the already existing situation Samsargajjwar (More aggravation of Dosha Symptoms with Bala Naash (loss of strength) and Severe Agni dushti Lakshanas (Impaired functions of Digestive fire)

Therapeutic recommendations:

Jwarashamanam (Anti Pyretics), Tridosh Shaman, (Pacifying three doshas) Protection of Patients strength, Balancing digestive fire, Old and Patients with co-morbidities need extra care with their other diseases treatments.

Suggested Herbal Intervention -

**Formula c)** Shyonak, Bhurja Patra, Nirgudi Patra, Bilva Patra, Shrunji, Kiratatikta,

**Stage 3**

The stage of initiation of dhaatu Paak (Pre Sepsis), Dosha aggravation leading to Sannipat Jwara.

Therapeutic recommendations:

Jwara shaman, Medicines to stop dhaatupaakam, Medications for bronchodilation and expectoration, Ojowardhan

Suggested Herbal Intervention

**Formula d)** Shyonak, Bhurja, Karkat Shrunji, Haritaki, Nirgudi, Kalamegh Ashwagandha,

**Formula e)** Bilva Patra + Kiratatikta Quath.

**Stage 4**

Stage of Sanniipataj Jwara with Dhaatupaaka (Interlukin storm) and Gambhir Shwaas (severe dyspnoea) coming forwards as an Upadravam (Complications).

Therapeutic recommendations - Management of sannipatajwar, may need respiratory support and intensive care.

Suggested Herbal Intervention

Table 2 : Medicinal Plants with their class of action & Ayurvedic pharmacodynamics described in Ayurvedic texts <sup>(41,46)</sup>

Sanskrit and Latin Name Family	Class of Action (Gana)	Taste (Rasa)	Post Digestive effect (Vipak)	Potency (Virya)	Action on Doshas
Shyonak Oroxy lumindicum (L) Vent Bignoniaceae	Shothahara (Anti inflammatory)	Sweet Bitter Astringent	Pungent	Hot	Tridosha Pacifying
Musta Cyperusrotundus Linn Cyperaceae	Lekhan (Anti Lipids)	Bitter Pungent Astringent	Pungent	Cold	Pitta and Kapha Pacifying
Kalamegh Andrographis paniculata (Burm F.) Wall. Ex. Nees Acanthaceae	---	Bitter	Pungent	Hot	Kapha Pitta Pacifying
Bhurja Betula utilis D. Don Betulaceae	---	Astringent	Pungent	Hot	Tridosha Pacifying
Kiratatikta Swertiachirata Gentianaceae	---	Bitter	Pungent	Cold	Kapha Vata Pacifying
Bilva Aegle marmelos (Linn) Correa ex Roxb Rutaceae	Shothahara (Anti inflammatory)	Pungent, Bitter, Astringent, Sweet	Pungent	Hot	Kapha and Vata pacifying
Nirgundi Vitex negundo Linn Verbenaceae	Vishghna (Anti Poison) Krimighna (Anti Infection)	Bitter, Pungent, Astringent	Pungent	Hot	Kapha Vata Pacifying
Haritaki Terminalia chebula, Retz. Combretaceae	Jwaraghna (Febrifuge) Kasaghna (Anti Tussive)	Astringent, Bitter, Sweet, Acid, Pungent	Sweet	Hot	Tridosha Pacifying
Karkatshrungi Pistaciaintegerrima, Stuert ex Brandis Anacardaceae	Kasa Hara (Anti Tussive) Hikka Nighrahan (Anti Hiccough)	Astringent Bitter	Punjent	Hot	Vata Kapha Pacifying
Amalaki Phyllanthus emblica Linn. Ephorbiaceae	Vayasthapan (Rejuvenator)	Astringent, Bitter, Sweet, Acid, Pungent	Sweet	Cold	Tridosha Pacifying
Haridra Curcuma longa Linn. Zingiberaceae	Vishaghna (Anti Poison) Shleshmasamshaman (Kapha Pacifying)	Bitter, Sweet	Pungent	Hot	Kapha Pitta Pacifying
Ashwagandha Withaniasomnifera L. Dunal Solanaceae	Balya (Promoting Strength) Bruhaniya (Immune enhancer)	Sweet, Bitter, Astringent	Sweet	Hot	Vata and Kapha Pacifying



Table 3: Plants with their important actions related to respiratory System and their parts used in treatment with general dosages<sup>(41,46)</sup>

Sanskrit and Latin Name	Important Actions described in Ayurvedic Texts	Useful Parts considered for research	General Dosages
Shyonak <i>Oroxy lumindicum</i> (L) Vent. Bignoniaceae	Anti Tussive Anti Asthma Sannipatjwar ( Sepsis/MODS)	Stem Bark	3-6 Gm
Musta <i>Cyperus rotundus</i> Linn Cyperaceae	Useful In All types of fever, Anti tussive and anti asthmatic Anti inflammatory,	Root Bulb	3-6 gm
Kalamegh <i>Andrographis paniculata</i> (Burm F.) Wall. Ex. Nees Acanthaceae	Anti-Pyretic, Anti Inflammatory, Blood cleanser, Immunostimulant, Anti-oxidant,	All Parts	3-6 gm
Bhurja <i>Betula utilis</i> D. Don Betulaceae	Useful in infection due to germs and viruses, Blood cleanser, Anti cough.	Stem Bark	3-6 gm
Kiratatikta <i>Swertia chirata</i> Gentianaceae	Best Anti Pyretic, Pitta Type of bronchitis, Anti Inflammatory, Blood Purifier,	All Parts	3-6 gm
Bilva <i>Aegle marmelos</i> (Linn) Correa ex Roxb Rutaceae	Leaves useful in Rhinitis, Expectorant, Bronchitis, Intermittent fever,	Leaves	3- 6 gm Juice 10-20 ml
Nirgundi <i>Vitex negundo</i> Linn Verbenaceae	Useful in Pneumonia, Pleurisy And fever, bronchitis, cough,	Leaves	3- 6 gm Juice 10-20 ml
Haritaki <i>Terminalia chebula</i> , Retz. Combretaceae	Anti-inflammatory, Febrifuge, Cough, Coryza, Asthma, Cardiotonic, antiseptic.	Fruit	3-6 gm
Karkatshrunji <i>Pistacia integerrima</i> , Stuert ex Brandis Anacardaceae	Expectorant, Anti tussive, Useful in Breathlessness	Galls	1-2 Gm
Amalaki <i>Phyllanthus emblica</i> Linn. Ephorbiaceae	Useful in Cough, Asthma, Fever, Inflammations, Cardiac disorders, Rejuvenator	Fruit	3- 6 gm Juice 10-20 ml
Haridra <i>Curcuma longa</i> Linn. Zingiberaceae	Useful in Rhinitis, Bronchitis, Anti septic- Blood Purifier, Anti inflammatory,	Rhizome	1-3 Gm
Ashwagandha <i>Withaniasomnifera</i> L. Dunal Solanaceae	Bronchodilator, Expectorant, Rejuvenator, Immune Booster, Anti anxiety	Root	3-6 Gm

**Formula f)** Shyonak, Bhurja, Haritaki, Kalamegh, Haridra, Karkatshrunji

**Formula g)** Bilva Patra + Kiratatikta + Ashwagandha Quath

#### Stage 5

Stage of Sannipaata jwaram with more symptoms of Dhatu, Srotas

Paakleading to Doshapaak Awastha (Interleukin storm- multiple organ failure) manifests and becomes fatal.

Therapeutic recommendations - Management of

Sannipatajwar and technological.

Supportalong with aatyayika chikitsaa (Intensive care)

Suggested Intervention Intensive care as a vital treatment.

#### Stage 6 Stage of Recovery :

Pathological Characters : The patient will have very weak responses because of severe dhatu and balakshay (loss of tissue and general bosity strength). patient might also have severe weakness due to medications and disease. Post viral sequels

suggesting Jwarottar daurbalya (Post disease debility) will be present.

Therapeutic recommendations - Increasing Dhatu Bala (Tissue response), Mano dhairya (Mental Strength) and Increasing immunity

Suggested Intervention

**Formula h)** Ashwagandha, Amalaki, Haridrayog

**Pharmacotherapeutics :** For preparing combinations, Powders of well dried and potent plant parts (Suggested in Table 3) should be utilised. The quantity of ingredients in each formulation should be as follows

**a)** Bilvapatra, Shrungi, Musta, Kalamegha, Haritaki Yog

Ingredients Quantity (all in equal quantity)

Recommended Dose (3 gm of powder 4 times a day after each 4 hours) Anupan - Vehicle (Honey or Hot water) Duration (Till symptoms relieves)

**b)** Bilvapatra, Shrungi, Musta, Kiratatikta, Haridra Yog

Ingredients Quantity (all in equal quantity)

Recommended Dose (3 gm of powder 4 times a day after each 4 hours) Anupan - Vehicle (Honey or Hot water) Duration (Till symptoms relieves)

**c)** Shyonak, Bhurja Patra, Nirgudi Patra, Bilva Patra, Shrungi, Kiratatikta,

Ingredients Quantity (all in equal quantity)

Recommended Dose (3 gm of powder 4 times a day after each 4 hours) Anupan - Vehicle (Honey or Hot water) Duration (Till symptoms relieved)

**d)** Shyonak, Bhurja, Karkat Shrungi, Haritaki, Nirgudi, Kalamegh Ashwagandha,

Ingredients Quantity (all in equal quantity)

Recommended Dose (3 gm of powder 4 times a day after each 4 hours) Anupan - Vehicle (Honey or Hot water) Duration (Till symptoms relieved)

**e)** Bilva Patra + Kiratatikta Quath

Ingredients Quantity (all in equal quantity)

Recommended Dose (40 ml of Decoction 4 times a day after each 4 hours with above Powder mixture) Anupan- Vehicle (Honey)

Duration (Till symptoms relieved)

**f)** Shyonak, Bhurja, Haritaki, Kalamegh, Haridra, Karkat Shrungi

Ingredients Quantity (all in equal quantity)

Recommended Dose (3 gm of powder 4 times a day after each 4 hours) Anupan - Vehicle (Honey or Hot water) Duration (Till symptoms relieved)

**g)** Bilva Patra + Kiratatikta + Ashwagandha Quath

Ingredients Quantity (all in equal quantity)

Recommended Dose (40 ml of Decoction 4 times a day after each 4 hours with above Powder mixture) Anupan - Vehicle (Honey) Duration (Till symptoms

relieved)

**h)** Ashwagandha, Amalaki, Haridrayog

Ingredients Quantity (all in equal quantity)

Recommended Dose (3 gm of powder 2 times a day on empty Stomach) Anupan - Vehicle (Honey or Hot water) Duration (Average 3 months)

**Justification of Suggested Interventions :**

**a)** Bilvapatra, Shrungi, Musta, Kalamegha, HaritakiYog

This combination is precisely done for pacifying Kapha and vata symptoms also it will help to reduce dry cough and increase innate immunity to control disease at first entry level. Kaphashoshan (drying mucosal secretions), Kasaprashaman (anti tussive) actions of Karkatshrungi, Musta, haritaki are more presumed with jwaraghna (anti pyretic) qualities of Bilvapatra and kalamegha. Also the Vatanuloman(anti spasmodic) effect of Bilva and Haritaki are important actions in this stage.

The active principles from these plants also suggest broad spectrum antiviral activity with maximum receptor inhibition mostly at the level of P1pro, Clpro, Helicase, RdRp, GAGs, ACE 2- so this also suggests primary entry of virus will be blocked at this level and it will help to control the disease faster.

**b)** Bilva Patra, Shrungi, Musta, Kirataatikta, Haridrayog

Considering similar action with addition of Pitta vitiation to above symptoms, this changed formula with Musta, Kiratatikta and Haridra will help faster to pacify Pitta symptoms. Also the anticough and bronchodilator action of Bilva will be beneficial here, Shrungi will help to clean the bronchial passages by its anti-inflammatory action.

The molecular ingredient action of these plants will help to inhibit PLpro, 3 CLpro, Helicase, ACE 2, receptors, will help to control disease before it enters to lower respiratory tract.

**c)** Shyonak, Bhurja Patra, Nirgudi Patra, Bilva Patra, Shrungi, Kiratatikta,

Doshaaggravation in second stage will need more stronger pacification from effective pharmacodynamic actions. Here Kasahar (anti tussive), Shwasahar (Reducing breathlessness) actions with reducing Ama (toxins) from Pittaj intervention causing Jwara (Fever) are particularised from these plants.

The Shothahar (Anti-inflammatory) as well as Vishaghna (Antipoison) actions of Shyonak, Nirgudi and Bilva will play important role. The Bhutaghna or rakshoghna qualities ie antiviral or bactericidal uses of Bhurja and Bilva are also very necessary.

Jwaraghna (Antipyretic) actions from Kiratatikt will dominate the disease pathology. Similarly Kasaghna (Anti Cough) properties of Bilva and Shrungi will play immense role in this stage. These plants may also help to control viral load by blocking following receptors with their active ingredients Plpro, RdRp, 3CLpro, Helicase, ACE 2.

**d)** Shyonak, Bhurja, Karkat Shrungi, Haritaki, Nirgudi, Kalamegh Ashwagandha

**e)** Bilva Patra + Kiratatikta Quath

During third stage of pre sepsis, it's a must to stop Dhatu paak (Sepsis), Most needed treatment here is to control the severe accumulation of toxins (we may predict precisely high accumulation of interleukin) and high pitta vitiation.

Shyonak and Bhurja will help to reduce tissue inflammations as well as act as anti viral drugs. Kalamegha will help to control internal toxins and high Pitta, also help to reduce dhatu paak by its cold potency. Bilva and Nirgudi will act as anti-inflammatory, expectorant and will be useful in bronchitis as well as in Pneumonia. Haritaki will play important role of antitussive, Antiasthma, Cardiotonic and antiseptic drug in this formula. It will also help to chelate extra iron from the blood.<sup>(44)</sup> Ashwagandha will help to maintain tissue energy and will give immunity to fight disease. Its bronchodilator and expectorant action will be also beneficial here. It will also enhance oxygen carrying capacity of the tissues.<sup>(45)</sup>

The separate Decoction of Bilva Patra and Kiratatikta are conjugated to get more anti pyretic, anti-inflammatory and antitussive action in this stage.

**f)** Shyonak, Bhurja, Haritaki, Kalamegh, Haridra, KarkatShrungi

**g)** Bilva Patra + Kiratatikta + Ashwagandha Quath

This fourth stage can be corelated with kashatasadhyavyadhilakshanas (stage of difficult to cure). More stronger medications are necessary to combat the disease. Here tridosha pacification with dhatupaakvirodhi (controlling Sepsis) actions are important. Similarly fever should be controlled to protect vital organs of the patients.

So Haridra, karkat Shrungi, Kalamegha and haritaki will be very useful here to absorb the ama (toxins) from the tissues by their blood purificatory actions, Shyonak and Bhurja will be necessary to reduce the inflammations and viral load from body, Haritaki and karkatashrungi will be helpful in bronchitis and help to protect respiratory .

The decoction of Bilva Patra with Kiratatikta and Ashwagandha will help to reduce fever and

lungs inflammations by antipyretic, Bronchodialator actions. Also iron chelation effect of haritaki<sup>(44)</sup> and enhancing oxygen carrying capacity of Ashwagandha <sup>(45)</sup> will help to reduce dhatu paak (Sepsis) and boost the immunity to fight the virus. Ashwagandha will also act as anti anxiety agent to give psychological support to patient.

As described above, the Stage Five will need mechanical support with Intensive care.

**h)** Ashwagandha, Amalaki, Haridra

In the recovery stage maintenance of Tissue energy, improvement in immunity as well as boosting physical and mental strength is important. The immunomodulator and adaptogenic plants like Ashwagandha, Amalaki will play very immense role. In Ayurvedic texts Dhatri Nisha compound is suggested in PramehVyadhi (Diabetes) specially to control extra kleda/ Ama (circulating Toxins), improve vitality and to offer a tissue strength, this combination has been well researched being widely utilised among Ayurved fraternity. So Ashwagandha in addition to this combination will potentiate the action and help to rejuvenate faster. It will also offer anti stress effect in addition which will be very beneficial in this stage.

Also its active principles suggest their inhibitory actions on following receptors 3 CLpro, Helicase and ACE 2.

**Discussion** - The disease COVID 19 can be corelated with Ayurvedic diagnostics. Specifically Agantujjwar and Sannipatajjwar shows the equal pathological aspects of this disease which also can be corelated with Sepsis/Septic Shock/ Systemic Inflammatory Response Syndrome (SIRS)/ Multiple Organ Dysfunction Syndrome (MODS)

The Probable antiviral (SARS CoV 2) properties of selected plants according to Ayurvedic therapeutics and receptor inhibition actions of their chemical ingredients will be beneficial in this situation of global outbreak of Corona. Ayurvedic plants have tremendous potential of curing the disease based on their pharmacological activities mention in ancient text books such as Brihat Trayee and Laghu Trayee. The new disease pathophysiology also can be identified with Ayurvedic norms by knowing the sign and symptoms from affected persons. After knowing the etiopathology of any unknown disease, Ayurvedic pharmaco therapeutics can be recommended for its treatment in particular stage or conditions. Ayurved emphasise that, proper pharmacological aspects should be followed to utilise the plants for getting appropriate results, such as, suggested part of the

plant should be used in suggested dosages to get maximum beneficial effect from that particular plant. All the Ayurvedic pharmaceutical process of drug preparation should also be considered to prepare the formulas like preparing Powders, Mixtures, decoctions to maintain the potency of the drug.

**Conclusion** - This suggested Ayurvedic intervention are assumed to be beneficial according to Ayurvedic as well as Modern Scientific norms. They can also be accompanied with the modern antiviral treatment to get more enhancement of antiviral drugs and benefits to the patients. Clinical evaluation will help to understand mechanism of antiviral action of these plants.

The Ayurvedic plants Shyonak, Musta, Kalamegha, Bhurja, Kiratatikta, Bilva, Nirgundi, Amalaki, Haritaki, Haridra, Karkatashrunji and Ashwagandha can be suggested as beneficial plants in treatment of COVID 19 as a herbal treatment or as a adjuvant remedy to modern Antiviral therapeutics.

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## A Critical Review Of Psoriasis - Modern As Well As Ayurvedic Point Of View

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**Introduction** - Today we live in the 21st century where everything is on fastrack mode. Technologies have reached so far with the help of science and its application in various fields that, human life is made more and more comfortable. But, as there are two sides of a coin so are the consequences. When we look upon the positive side we cannot ignore the negative effects of this on our lifestyles which are leading us to next level generation of diseases and health hazards. For example stress, depression, anxiety, obesity etc. which are the triggering as well as causative factors of many existing old and new diseases.

One such disorder related to skin disease is 'PSORIASIS' in which lifestyle plays a major role as a triggering factor. Psoriasis is a chronic inflammatory skin condition caused by overactive immune system and is associated with profound impaired quality of life. The exact cause of the disease is yet unknown but various environmental factors such as stress, cold, infections are the triggering factors for it. The rate of prevalence is 0.8% in India. Many new cases and severity of the disease has led too many new researches and findings in this field.

From the Ayurvedic point of view Psoriasis can be co-related with kushtavyadhi to some extent, specifically with Sidhmakushta, Kitibhakushta, Ekkushta looking at their similarities and presenting

symptoms though they are not exactly the same.

**Aim** - To study psoriasis according to modern and ayurvedic point of view.

**Objectives** - 1) To study psoriasis according from Ayurvedic compendia. 2) To study the pathogenesis of Psoriasis according to Ayurveda. 3) To understand Ayurvedic line of treatment in management of Psoriasis.

**Materials And Methods** - Literature work references co-relating with psoriasis word collected from ayurvedic compendia.

**Review of literature - Modern view** - Psoriasis is a autoimmune genetic disorder. It is a multifactorial skin disease with the complex pathogenesis. Is classified into following types.

**1) Plague psoriasis / Psoriasis vulgaris** - It is the most common type. Red or pink small scaly bumps that merge into plague skin, itchy, silvery scales.

**2) Gutlate psoriasis** - In this small drop like spots are seen.

**3) Inverse psoriasis** - It is mainly found in the folds like underarms, naval, groin, buttocks.

**4) Pustular psoriasis** - In this small pus filled yellowish blisters are seen along with presence of fever sometime.

Common symptoms of Psoriasis

- 1) Initially red spot on body.
- 2) Patches of skin - dry, swollen, inflamed.

- 3) Silvery flakes raised and thick skin.
- 4) Pain
- 5) Itching
- 6) Burning sensation

#### Do's and Don'ts -

The food and habits that are beneficial during psoriasis are as follows :

Omega 3 is said to be good in psoriasis cold water fishes, walnuts, seeds of pumpkin, sunflower, almonds, avocado, olive oil ,nuts are beneficial as they are mono-unsaturated fatty acids which contains Omega 3. Fruits like papaya, figs. Vegetables like spinach, broccoli, green leafy vegetables, sweet potatoes, paprika are advised as they are rich in vitamin K,vitamin A,vitamin D and antioxidants. Citrus fruits to maintain the normal integrity of skin.

Exercise like walking, swimming are advised to control weight.

#### Don't

Food and habits that are to be avoided in psoriasis are as follows : All gluten rich food such as wheat, barley, rice, processed food, bakery products, sugar, white flour, white rice is to be avoided as they contain Omega 6 fatty acid which causes inflammation. Red meat, cow's milk, corn, Bread, pastries, cakes, pasta, soya sauce, tomatoes, eggs, etc should be avoided.

Alcohol dilates vessels and increases blood to the skin open pores and therefore acts as fuel to psoriasis hence should be strictly avoided. Smoking, scratching the skin, stress, cold are all contraindicated in psoriasis.

#### Ayurvedic co-relation of Psoriasis

There is no direct reference of Psoriasis in ayurvedic samhita but as Acharya charak says there are innumerable diseases in the universe and it is not possible to name every disease so an intelligent doctor must look for the dosh and dushya vitiated in the body and treat accordingly hence, Psoriasis can be co-related with the presenting symptoms of Kushtavyadhi and treated well.

#### Prodromal Lakshan Of Kushta

स्पर्शान्त्रत्वमतिस्वेदो.... कुष्ठ लक्षणं अग्रजम्।। च.चि.७/११-१२

Loss of sensation, excessive perspiration, or no perspiration, deranged complexion of skin, rashes on skin, horripilation, itching, pain, discomfort and exertion.Re- occurrence and delayed healing, burning sensation, benumbed organs are the prodromal symptoms of Kushtavyadhi.

1) **Ekkushta** - Charak and sushrut both acharya have classified it under kshudrakushta.

Doshaadhikya is vatakaphaj.

अस्वेदनं महावास्तु यन्मत्यशकलोपमम् तदेक कुष्ठं। च.चि.७/११-२१

One which does not Perspire, extensive like fish scales is called as Ekkushta

2) **Kitibhakushta** - Charak and sushrut both acharya have classified it under kshudrakushta.

Doshaadhikya is vatakaphaj.

श्यावं किणखरस्पर्श परुषं कितिभं स्मृतं। च.चि.७/११-२२

Blackish discoloration, scaly, rough to touch and dry with cracked skin is Kitibhakushta.

3) **Sidhmakushta** - Charak have classified it under mahakushta and sushrut have classified under kshudrakushta.

Doshaadhikya is vatakaphaj.

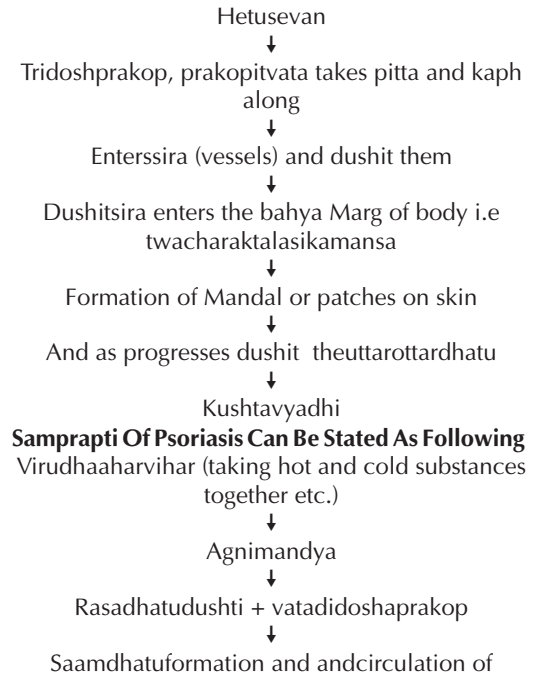
श्वेतं ताम्रं तनु च यदजौघृष्टं विमुञ्चति।

अलाबुपुष्पवर्णं तत् सिध्मं प्रायेण च उरसि। च.चि.७/१९

That which is white, coppery, thin, leaves out dust like powder on rubbing and stimulate flower of bottle gourd is known as Sidhmakushta ,mostly appears in chest region. All these above symptoms can be co-related well with the presenting symptoms of Plague Psoriasis.

**Samprapti** - In kushavyadhisamprapti, saptadavyasangrah is said to be responsible for causing the disease it includes Tridosh vata, pitta, kapha and lasika(lymph)rakta and mansadhatu.

वातादयस्त्रयो दुष्टास्त्वग्रक्तं.... सप्तकोद्रव्यसंग्रहः। च.चि.८/७-८



prakopitdasha in the whole body  
 ↓  
 Enter sira and causes raktadushti and mansadushti  
 ↓  
 Twacha, updhatu of mansa get affected  
 ↓  
 Derangement of twacha and rakta takes place  
 ↓  
 Dryness, roughness, discoloration and inflammatory patches seen on skin  
 ↓  
 Burning sensation, pain etc symptoms seen according to predominant dosha  
 ↓  
 White silvery scale appears with profound itching  
 ↓  
 Psoriasis.

The saptadravyasangraha stated in kushtais also seen in psoriasis hence can be co-related and treated by breaking the samprapti accordingly.

#### Pathya Apathya

लघुनि चान्ननि हितानि..... न गुडास्तिलाक्ष्व । च.चि.७/८२-८३

As regards to diet, light cereals and Tiktarasatmak vegetables our wholesome, likewise edibles and ghee mixed with bhallataka, Triphala, neemba should be used. Old cereals, meat of wild animals, green gram, patola, are recommended.

Food which are heavy sour in taste is to be avoided, milk and milk products, curd, marshy fish, jaggery, seasm are all contraindicated.

**Chikitsa** - The chikitsa sutra described in kushativyadhi can be used in psoriasis treatment.

वातोत्तरेषु सर्पिवमनं श्लेशमोत्तरेषु कुष्ठेषु ।

पित्तोत्तरेषुमोक्षा रक्तस्य विरेचनं चाग्रे । च.चि.७/३९

In pre dominance of vata dosh intake of ghee is recommended. In kapha dosh predominance vaman is recommended, pitta predominance virechan followed by raktamokshan is advised accordingly.

Mainly shodhanchikitsa is advised in the patient of Psoriasis as the Dosha are vitiated and it becomes necessary to remove them from the body with the help of shodhan chikitsa.

List of dravyas and kalpa that can be used in psoriasis treatment are

**Dravya** - nimba, kushta, khadir, manjusha, karanj, patola, daruharidra, sunti, maricha, pimpali, musta, triphala, vidanga, haridra, madanphal, aragwadha, katphal, guduchi, chakramard, panchatikta dravyas, ativisha etc.

**Kalpa** - Arogya vardhini, gandhak rasayan, rasa

manikya, pancha tikta guggul, kaishor guggul, suvarnaraj vangeshwar, sukshma triphala, laghu manjishtadi, maha manjishtadi etc.

**Snehakalpana**- pancha tikta ghrut, sarivadi ghrut, nimbatail, karanjtail, shatadhauti ghrut etc. can be used for local application.

According to the involvement of doshas and awastha of disease and the patient as well as considering rutu the line of treatment is decided with the help of above mentioned drugs and varies from person to person. This is holistic approach.

Though basti is contraindicated in kushta, it can be used in psoriasis patients. According to the condition where there is need alternative niruha and anuvasanbasti are prescribed.

In condition where patient is thin, lean, weak, mustadibasti is indicated. If the patient is old and weakyapanbasti is given. In such condition mrudushodhan is advised.

Shirodhara is also prescribed in psoriasis if there are manashetu involved such as the level of stress, irritability etc. The mental stability is affected in these patients so with the help of shirodhara mind can be mentally stabilized. In South India takradhara is also recommended. Tail dhara is also performed.

#### Observation -

Psoriasis symptoms	Kushtalakshan Cha. Chi.
Red spot	Vrana , Tamrapitika
Dry skin	Rukshaand parusha
Inflammation	Kotha, vaivarnya
Thick scales	Matsyashakaloupanam
Silvery flakes	Rajoghrushtam
Pain	Toda
Itching	Kandu
Burning sensation	Daha

**Discussion** - It can be stated that there are many similarity inkushtavyadhi described inayurvedic compendia with the signs and symptoms of psoriasis disease described by modern science.

The hetus, lakshan, pathyaapathya goes hand in hand of both the diseases. The samprapti of psoriasis drawn from the Dosha and dushtya vitiation can be very well co-related with that of kushatvyadhi.

In modern science the only treatment on psoriasis is the steroidal treatment which comes with its own side effects soon or later. Immuno modulator, vitamins and steroids are used for the treatment of psoriasis. According to modern science the disease is incurable as it reoccurs. With the help of ayurvedic treatment the rate of

Reoccurrence can be lowered and by following regularly the pathya'sone can prevent and control psoriasis to a very great extent. Psoriasis is an autoimmune disorder and it can be transferred from one generation to another. With the help of shodhanchikitsathis risk can be minimised.

**Conclusion** - Thus, establishing etiopathogenesis (samprapti) of psoriasis according to Ayurveda and co-relating it to kushtavyadhi helped establishing ayurvedic line of treatment which also shows positive results in the patient suffering from psoriasis. Hence, it can be concluded that psoriasis in modern science can be very well co-related with

kushtavyadhi (Ekkushta, Kitibhakuшта, Sushmakushta) from ayurvedic compendia.

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## A Review on Vishachikitsa In Prayogasamucchaya Grantha

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**Introduction** - Agadtantra (Toxicology) is one among the Ashtangas of Ayurveda which deals with the science of poisoning. Kerala has a rich tradition in Ayurveda, especially in Pancakarma and Vishachikitsa. Many authentic literature is available on Vishachikitsa in Malayalam language were written by famous vishavaidyas. Kriyakaumudi,<sup>1</sup> Jyotsnika, Visa Narayaniyam and Prayoga samucchayam are popular works among them. Here, an attempt to highlight the importance of Prayoga samucchayam, a famous book on toxicology.

**About The Book And Author** - Prayoga samucchayam was written by Kochunni Thampuram in the year 1934 - 35. It was published by Sriramavilasam press and book depot, Kollam and was printed at Srikrishna press. A revised edition was published in 1970. The author, Kochunni Thampuram was a member of the Royal Cochin dynasty. He was born at Thrissur and brought up at Tripunithura, Kochi. He was a disciple of famous toxicologist Kochunni Valya Thampuram. Kokkara Namboodiri who was the teacher of Kochunni Valya Thampuram was an eminent toxicologist who was a master of duta laksana (features of informer).

**Contents** - Prayoga samucchayam is one of the most popular and widely practiced book in

toxicology in Kerala. The book is divided into 11 chapters (paricchedas). The first chapter starts with salutations to the favorite Gods - Vishnu, Shiva, Dhanvantari, Bhadrakali, Kochi Maharaja, his teacher, Kochunni Valya Thampuram and Garuda. Prayoga samucchayam classifies visha into two groups, viz. sthavara (inanimate) and jangama (animate). This is followed by a brief description of the origin of snakes. A mythological story is narrated in this context. This work gives prime importance to sarpavisha (snake poisoning).

**Classification Of Snake** - It is mentioned that, in the beginning there were only 8 snakes named ananta, gulika, vasuki, shankapalaka, takshaka, mahapadma, padma and karkotaka and that all other snakes originated from these.

Snakes are divided into four categories. The Darvikara (hooded) family with 26 varieties, Mandali (viperine) family with 16 types, Rajila (Krait) with 13 varieties and Ventira (cross breeds) with 21 types. And again divided into 4 kulas (families). The specific distinguishing features, food, place of dwelling, time of travel, direction of vision of each family are explained in detail. For example, main food of brahmana kula snakes is air. They travel during morning time, always reside in caves, mountains, forest with treasures, food grains etc., Similarly the kshatriya kulastay



usually in the Valmika (anthill) and will come out attracted to the smell of first rain. The dosa predominance of each variety, their potency with respect to age,<sup>2</sup> season and time of travel are same as described in Ayurvedic classics.<sup>3,4</sup>

**Life-cycle Of Snake As Per Prayoga Samucchayam** - Snakes conceive in three months beginning with the karkidaka month (August-September) of the Malayalam calendar. After 4 months of gestation, they lay eggs, total 21 eggs, seven each in three different places. Sex determination of offspring according to the color of eggs, red will hatch into females, yellow into males and mixed color will be napumsaka (hermaphrodite). According to the month in which they hatch, their characters differ. In that, the snakes born in caitra month (March- April) will have evil habits, those in dhanu (Dec- Jan) month will be strong and energetic, the ones in makara (Jan- Feb) month will be more poisonous than others. Snakes open their eyes on the 7th day after hatching and take five days more to gain consciousness and teeth eruption. In another 30 days, they become poisonous. The off springs are five angulas (1 angula = 1.905 cm) of length, body will be red coloured with black head. Mother snake will let only three off springs live and consumes all others.

**Snake Bite Causes And Prognosis** - The author has given a detailed description of types of bite marks along with the causes and prognosis. (See table 1)

If vital parts in body such as forehead, cheeks, nose, ears, temples, palmar surface of hands, nipples, cardiac area, axillary area, umbilicus, groins and thighs are bitten, the

chance of survival becomes doubtful.

Four types of poisonous teeth and their prognosis are mentioned, which are:

**Karali** - Bite resembles cow's horn with the smell of agaru.

**Makari** - Bite resembles a bow with oily smell.

**Kalaratri** - Bite resembles foot of a bird with sandal wood smell.

**Yamadutika** - Edema will be seen with the smell of milk.

Spread of poison is compared to spread of tamarind in milk. Visha (poison) stays at bite site for 100 matras (unit of time), then combines with vata and subsequently circulate throughout the body. The sequence of its travel will be first to the forehead, then to eyes, all over the face and eventually into the saptadhatu (constituent elements). Signs and symptoms which indicate forthcoming death are tremors, redness of lateral ends of eyes and edematous appearance of mouth. If signs of life cannot be seen even after expulsion of urine and faeces, death can be assured. Root of Nili (Indigofera tinctoria) ground in juice of Nili itself, rolled into the size of the fruit of Vibhitaki (Terminalia bellirica) and dried is given with milk. If vomiting occurs immediately, prognosis is good. If not, its asadhya (incurable).

**Symptoms of impending death are also mentioned in the first chapter, they are:**

- (i) No swelling even when the thighs are beaten with a stick,
- (ii) Eyes are open and dilated,
- (iii) Mouth is open and dilation in rectum is observed,
- (iv) If semen oozes out automatically on

<b>(Table 1)</b>		
<b>Bite Mark</b>	<b>Causes</b>	<b>Prognosis</b>
Curved, wet by snake's saliva	Frightened snake	Less Potent
Snake's saliva and blood	Mada (agitated)	Removal of poison is difficult
Dry and deep	Thirsty	Poisonous
Saliva, blood and edema	Protection of offsprings	Poisonous
Pallor, blackish blood and saliva	Snake which has been beaten	Poison can be removed with very difficulty
Straight and curved	Anger	Death is sure
Round with pain and blood, edema appears like tortoise	By the order of yama (God of death)	Death is sure

massaging *mutra nadi* (urethra).

Eight different confirmatory tests for impending death are described. One of them is as follows : Juice of *haridra* (*Curcuma longa*) and oil should be equally given orally. If it remains in stomach, he will live but if the mixture goes through the GI tract and is seen in the anal region, death can be assured.

Second chapter deals with *darvikara* (hooded) snake poisoning. Immediate treatments, names, specific symptoms and treatment of 26 types of *darvikara* are explained in detail. Fume therapy using certain drugs can help regain consciousness. The first dung of a calf is ground in the urine of a goat and a suppository is made which is used for *dhumapana* (fume inhalation). This chapter also includes many *nasya* (nasal administration), *anjana* (collyrium), *lepa* (external ointment), *pana* (drink) with simple drugs mentioned.

Third chapter covers *mandali* (viperine) snake treatment. *Veganusara chikitsa* (stage wise treatment), specific symptoms and treatment of 16 types of *mandali* snakes are explained here. E.g.: In *rakta mandali* bite, bleeding from nose and mouth, foul smell, deep enmity, hatred, fainting etc. will be seen. When these are the symptoms, curd, *trikatu*, *saindhava*, butter, honey and *kustha* (*Saussurea lappa*) should be mixed and used internally. Management of complications in *ma??alivi?a* also has been explained. In bleeding from hair follicles, fried powder of root of *sigru* (*Moringa oleifera*) mixed with cow's ghee should be massaged all over the body. Medicines that need to be given in case of thirst, burning sensation, pain, swelling, yellowish urine, bleeding from mouth, haematemesis, weakness of joints, retention of urine, vomiting and in severe rise of temperature are also explained. In yellowish urine, bark of *karanja* (*Pongamia pinnata*) should be given in hot water. In the ulcer at the *mandali* bite site, *dasapushpa*<sup>5</sup> (*bhadra*, *viparita lajjalu*, *indravalli*, *musali*, *durva*, *bhringaraja*, *ahukarni*, *vishnukranti*, *lakshmana* and *sahadevi*) *svarasa* (juice) or *parantyadi tailam* can be used.

Chapter four explains *Rajila visa* (krait family) treatment. *Veganusara chikitsa* (stage wise treatment), symptoms and treatment of 13

types of *Rajila* snakes are mentioned. In arresting of whole body movements, *triphala* ground in milk is recommended to be given orally. In excessive phlegm production, juice of *arka* (*Calotropis gigantea*) leaf mixed with *hingu* (*Ferula asafoetida*) is recommended to be given internally. *Nasya* and *anjana* to revive a person from unconsciousness have been described.<sup>3</sup>

Fifth chapter explains common measures that can be adopted in all snake bite cases when exact identification of snake cannot be done. Single drug preparations that relieve fainting and all types of poisons are mentioned. Highly potent medicines are mentioned under the title of *kala vancana prayogas* (extreme measures). Medications to regain the pulse of a bite victim, drugs which make the poison to get vomited out have also been detailed here. The common medicines used in Kerala for snake bite treatment such as *Jivaraksa gulika*, *Vilvadi gulika*, *Taruna bhaskaram gulika*, *Mrtyunjaya rasa* have also been explained.

Chapter six dealt with poisoning due to *Musika* (rat), its 16 types, symptoms and treatment. Five stage wise symptoms and treatment are explained. Application of certain single drugs over vertex along with many internal medications which helps in quick elimination of rat poison have been mentioned. *Nasya* (nasal administration) using egg of fire ants, external medicines for severe swelling and many internal medications have also been mentioned.

Chapter seven describes *Vrschika visa* (scorpion envenomation). The text recommends initial *dhara* (pouring of a continuous and soothing stream of medicines) followed by *panayogas* (drink recipes). If sting is severe, snake bite management steps should be undertaken. Immediate application of juice of *karanja* (*Pongamia pinnata*) into eyes, mouth and bite site is said to relieve all types of scorpion poison according to the author.

Chapter eight deals with *lutha* (spider) poisoning treatment. Signs, symptoms and general treatment of 20 types of *lutha* have been mentioned here. Day to day changes of the lesion for 7 days and the corresponding treatment has been explained. Medicines for tumorous skin growths, simple and effective

dhara recipes are also explained.

Chapter nine explains about the symptoms and treatment of most of the poisons of cat, mongoose, monkey, horse, millipede, fox, lizard, garden lizard, frog, chameleon, poisonous leech, poisonous fish, wasp and even human poisoning due to nails and teeth. In case of garden lizard poisoning, coin like round lesions appear all over body. In this condition, oral intake of nili (*Indigofera tinctoria*) root decoction will be effective. Alarka visa (rabies) is also mentioned in this context. Signs and symptoms, the differentiating features of a rabid dog bite, prognosis, diet restrictions and the treatment protocol with formulations are explained here. Symptoms of poisoned pet animals, treatment of bhinna visa (fragmented poison) and dietary restrictions for poison victims of all kinds are also detailed. The specific quantity of each formulation that should be administered for a poison victim is quoted along with various surgical procedures.

Tenth chapter deals with duta laksanas (features of the informer). Features of an informer which bring about good prognosis and the vice-versa are detailed. Twelve nakstras (asterisms) which are inauspicious in poisoning cases are explained on the basis of lunar calculations. The text gives a description of detection of the type of snake to be deduced from the position of the informer in the physician's room. If the duta (informer) utters the snake's name first, then the death of the patient is almost inevitable. Prognosis was also assessed by counting the words uttered by the informer. The place where the snake bite happened and the sex of snake can also be deduced from informer. The part of body bitten and intensity also can be deduced from the informer's and physician's positions.

Chapter eleven deals with kaivisa (homicidal poison) treatment. Tests to detect the site of poison, signs and symptoms of sthava visa (poisoning due to inanimate things) and its treatment are explained. Simple medications such as continuous pouring of cold water and buttermilk treated with vilva (*Aegle marmelos*) leaf for internal use is recommended. Along with the above, antidotes for 33 poisonous drugs, atibhaksana (over-eating) treatment,

incompatible foods and its treatment, food poisoning features and treatment are also explained in a practically feasible manner.

**Discussion And Conclusion** - Vishachikitsa (Toxicology) is one among the Ashtangas of Ayurveda which demands more importance than other branches since it has to deal with fatal cases and emergency management. The Vaidya who deals with a poisoning case needs to be careful and confident enough because even a mild ignorance can take the patient into death. Management of snake bites and other visha cases with Ayurvedic drugs are on decrease these days due to misinformation and lack of researches. There were many traditional vaidyas who were excellent in treating snake bite and other poisoning cases using these medicines and practices even today. There are number of books written in regional languages in Ayurveda. Several formulations are comprised of authentic books of keraliyavishachikitsa for all types of poisonous cases. Prayogasamucchaya is one such book popular in Kerala. It contains many simple and practically feasible formulations which can be easily prepared and used for managing poisoned conditions. It is a compiled work which comprises many toxicology books and samhitas. This will surely give confidence to young practitioners of Ayurvedic system in handling poisoning cases. There is a need of further research on the formulations given in the text in both literature and clinical levels.

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## Drug Review: Hansapadi (Adiantum Lunulatum Burn.f)

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**Introduction :** India is gifted with wild range of biodiversity. Most of the plant that we found in our surrounding has some medicinal properties and some of them are truly useful to us in many aspects. Hansapadi is one of that kind of fern. In India it is found very commonly in the South in plains and lower slopes of the hills and in the North along the foot of the Himalayas from East to West at an altitude of 1000-3000 feet<sup>1</sup>. As far as trade of medicinal plants is concerned only the species of Adiantum are exploited under the trade name Hansaraj, Hansapadi, Mayurshikha. As the name indicates, the plant is described as the one resembling the feet of swan<sup>2</sup>. The entire plant of this species is used as medicine in Ayurveda and Unani.

**Aim and Objective :** To review Hansapadi (Adiantum Lunulatum Burn.f) from available Ayurvedic Samhita, various texts, journals and modern literature.

**Materials and Methods :** Various Ayurved Samhitas with their commentaries by different authors, web search, various Textbooks and peer reviewed journals were studied to get more information about Hansapadi.

### Review Of Literature :

Toxonomical Classification<sup>3</sup>:

**Kingdom :** plantae **Phylum :** Pteridophyta

**Class :** Pteropsida **Order :** Filicales

**Family :** Pteridaceae (Adiantaceae)

**Genus :** Adiantum

**Species :** Adiantum Lunulatum Burn.f

Synonyms<sup>4,5,6,7</sup>

Brahmadanti, Chitrapada, Dharttarashtrapadi, Ghritamandalika, Godhangri, Godhapadika, Hamsapadika, Hansaghri, Hansvati, Karnati, Kiramata, Kirapadika, Kitamari, Madhusrava, Padangi, Raktapadi, Sancharini, Shitangi, Sutapadika, Suvaka, Tamrapadi, Tridala, Tripadi, Yripadika, Tripornika, Vanda, Vikranta, Vishvagranti, Vrikshabhaksha, Vriksharuha, Vishagranti

**Vernacular Names**<sup>8</sup>

**English :** Walking maiden hair fern.

**Hindi :** Hansapadi Banda Hansaraj, Samalpatti, Hansapagi, Kalijhamp, Kalijhant Paresiyavasan, Hanspadee.

**Bengali :** Goyaleta, Kalijhant

**Gujrati :** Hansapadi, Mubarkha, Mubarkhinipalo, Hansraja.

**Kannada :** Hamsapadi, Nayalad, Naralad.

**Marathi :** Ghodkhuri, Hansaraj, Hansaraj, Mubarak, Kamsaraj Rajkombada, Rajhans

**Kashmiri :** Dumtuli

**Panjabi :** Harsraj

**Telegu :** Nayalod, Hamsapadi

**Assami :** Sharul Arj, Sharujeena, Parsiyav

**Santhal :** Dadhali

**Porebunder :** Hansaraj, Kalohansraj

**Philippines :** Culantrillo

**Unani :** Hansaraj

**Persian :** Parsiaoshan

**Bangladesh :** Bandhortala

**Morphology :** This is fern, grows to a height of 1-1.5 feet. The stem part grows is found beneath the ground. Stem of leaf is smooth, reddish black color. The leaflet is curvy, oval shaped 0.5-1 inch long.

**Habitat :** It is shade and moisture loving plant and therefore they grow in cool, shady, moist places in both in the hills and plane areas.

**Distribution :** It is distributed throughout grater part of India up to an altitude of 1200 meters on rocks and slopes of the hill in moist places. The plan is native to tropics, commonly found at Mount Abu, Gwaparnath, Ajmer and Menal of Rajasthan, Ceylon and Burma<sup>9</sup>.

**Ayurvedic Property**<sup>10,11</sup>

**Gana :**

**Charaka Samhita :** Kanthya Kashaya, Madhur skandha.

**Sushrut Samhita :** Vidarigandhadi gana.

**Bhavprakasha :** Guduchyadi varga

**Dhanvantari Nigantu :** Karveeradi varga

**Kayyadev nighantu :** Oushadhi varga

**Raj nighantu :** Parpatadi Varga

**Rasa (Taste) :** Kashaya, Tikta, Madhura

**Guna (Quality) :** Guru, Snigdha.

**Veerya (potency) :** Sheeta

**Vipaaka (Post Digestive effect) :** Madhura

**Dosha Karma (Action on Dosha) :**  
Khaphapittashamaka

**Roga-Haratwa**<sup>12,13,6,7</sup> : Visarpa, daha, atisara, luta visha, rohini, shotha, visha vrana, nakha-danta kshata janya vrana, swarbheda, kasa, shwasa, Prathishaya, mootrakrichcha, galganda, raktpitta, apsmara, gulma, daha jwara, Dourbaly

**Plant parts use :** Whole plant

**Dose :** Juice -10-20 ml; Powder 1-3 gm.;  
Decoction 50 -100ml

**Toxicology** LD50 of ethanolic extract was found to be >500 mg/kg bw i.p. in rats

**Chemical composition :** The chemical constituents are chlorophyll degradation product and higher carotenoids.

**Active principles in this are :** Hentriacontanone, Hentriacontane, Adiantone, Beta sitosterols, Triterpenes, Sugar, protein, Fat, Phenol, Quercetin-3-o-glucoside, filic-3ene, a new triterpine alcohol, 29-norhopan-22-ol, flavanoids including rutin and isoquercitin, tannin.

**Therapeutic Action and uses :**

**Generalised Symptoms :** It acts as febrifuge<sup>14</sup> and reduces burning sensation<sup>15</sup>. The whole plant is boiled with water and the decoction is applied externally on the affected places to get relief from body pain. It is a good Tonic and is beneficial in wasting diseases<sup>17</sup>, atrophy<sup>15</sup> cachexy inflammatory diseases. It is said to possess antiseptic activity and hence beneficial in septic conditions.

**Respiratory System**<sup>3</sup> The fronds are used against cough and cold. It is a good expectorant, the decoction of the rhizome is given in throat affections and also used for febrile conditions in children. It is a well known remedy in bronchitis and asthma. In Asthma the stem bark of *Bridelia retusa* along with that of *Terminalia bellrica* and the roots of *Adiantum lunulatum* Burm are crushed in equal proportions and taken in a size of red gram once daily for three months. Leaf and root decoction is used for the treatment of chest ache and other chest complaints. A syrup is made in France from the herb's fronds and rhizomes, Syrup De Capillaire and given in pulmonary

catarrh. The herb brings up phlegm. Provides relief in whooping cough. Pills of Bengal gram size are made of the paste obtained by mixing 100 g *A. lunulatum* (whole plant), 50 g seeds of *Balanites aegyptiaca* (L.) Del. (Balanitaceae) and 50 g gum of *Diospyros melanoxylon* Roxb. (Ebenaceae) with old jaggery. Two tablets a day are given for 34 days to cure typhoid. The nasal drops prepared by boiling the root in oil, are instilled in nose as a decongestant in hoarseness of voice. The decoction of Maidenhair being drunk helps those who are troubled with shortness of breath.

**Digestive System :** The whole plant is pungent and used as antidiysenteric. 2 g of fresh leaf paste is taken orally on empty stomach twice a day for 10 days for relief from indigestion<sup>18</sup>. Leaves, ground with cow's milk, are given to children for diarrhoea due to indigestion. It is a good carminative and is used in bilious complaints<sup>19</sup>. The fern is boiled in wine and drunk in cases of affections of spleen, liver and other viscera. It is also beneficial in yellow jaundice, diseases of spleen and stops fluxes in the stomach<sup>15</sup>, it is also said to be a good demulcent<sup>20</sup>.

**Musculoskeletal System :** It is used in muscle pain, sprain and rheumatic conditions. It is used to treat bone fractures<sup>15</sup>. Leaves and stems of *Lygodium flexuosum* (L.) Sw. and *Adiantum lunulatum* are macerated with black pepper (fruits of *Piper nigrum*) and fried in mustard oil. In Paralysis the mix is applied to the body thrice daily till cure<sup>21</sup>. Urinary System Rhizome is prescribed for strangury. Roots are considered diuretic and are used in dysurea, and help exceedingly to break the stone in the kidneys.

**Lymphatic System :** It is a good remedy for Elephantiasis. Rhizome is used to reduce glandular swellings. The Rhizome is used to reduce glandular swellings. The fronds made into plaster are applied to chronic gouty and other swellings and also in chronic tumours. It consumes and wastes away King's evil (swollen lymph glands caused by Tuberculosis).

**Reproductive system :** Fresh leaf decoction is given to cure irregular menstrual cycle. Plant paste is given to women to help them to conceive. It is found useful in cold inposhumes (purulent swellings or abscess) of the uterus; It is

employed as an emmenagogue under the names of polytrichi, polytrichion or kalliphylon, administered as a sweetened infusion of 1oz (30cc) to 1 pint (568 cc) of boiling water.

**Skin :** The whole plant is ground into a paste with turmeric and applied over the affected places to, treat burns, infected wounds and sores. Juice of the fresh plant is applied to abscess and wounds for quick healing. Paste of the plant is applied over boils to burst. It is applied 2-3 times a day<sup>20</sup>. Fruits and leaves are beneficial in leprosy, and erysipelas<sup>11,13</sup>. Leaf juice is given in ulcers and burning sensation. It is a good emollient and is also chewed for the treatment of mouth blisters. The herb, boiled in oil of camomile, dissolves knots, allays swellings and dries up moisture from ulcers. It is used in bleeding diseases. It is a good Styptic and has a coolant activity.

**Cosmetic :** It is considerably a good remedy for pimples. It also makes the hair of the head or beard to grow that is fallen and pulled off and hence used in baldness and hairfall.

**Eyes :** Frond extract mixed with honey is used as an eye ointment.

**Psychiatric illness :** Along with other therapeutic applications, The Ayurvedic Pharmacopeia of India indicates the use of the dried whole plant in psychosis. It is one of the ingredients of the classical drug Manasmitra vataka prescribed for mental disorders. It is also used in Convulsions, Epileptic fits.

**Antidotes :** It is used as an antidote in snake bites and also as an antidote for rabid dog's bite. The seeds are prescribed externally in suppurations due to poisonous bites.

**Other Ailments :** With *Asparagus racemosus* it is used in gonorrhoea.

**Other uses :** It is also used in nose studs and ear studs.

**Caution :** It is Emetic in large doses.

**Formulations :**<sup>22,23</sup>

Type of Dosage form	Name of formulation
Taila	Madhuyastyadi taila
Vati and Gutika	Manasmitra vataka
Rasayoga	Muktapanchamritarasa, Svarnabhupati rasa, Kalakuta rasa
Ghritam	Vidaryadi ghritam
Asava	Vidaryasava

**Discussion and Conclusion :** In Ayurvedic medicine many herbal drugs are used to cure and prevent diseases. According to the basic principle of Ayurveda every substance in the nature is made up of Panchmahabhoota and on that basis every substance can be used in the treatment of diseases and maintenance of health.

In this study Various Ayurved Samhitas with their commentaries by different authors, web search, various textbooks and peer reviewed journals were studied to get more information about Hansapadi. Various medicinal formulations of Hansapadi and there uses are also studied according to Samhita.

Hamsapadi, *Adiantum lunulatum* Burm.f. (A. Philippense Linn), though a Pteridophyte with a less economic importance but does wonders in the medical field and is not less than any Angiosperm. It has a very significant and wide range of therapeutic application such as leprosy, erysipelas, elephantiasis, dysurea, strangury, fever, asthma, hoarseness of voice and various other systemic illnesses. It has quite a few evaluated pharmacological activities such as antibacterial, antifungal, hypotensive, antioxidant etc. The Pharmacodynamics and Pharmacokinetics of the drug are still being analysed. Till date few researches have been carried out justifying some of the activities such as antioxidant, antifungal, antibacterial, hypotensive etc. But as per the Ayurvedic classics the range of utility is still wider and is yet to be justified and thus is a guideline for further research.

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## श्रद्धांजली

### डॉ. एस. आय. नागराळ यांचे दुःखद निधन

मुंबईतील सुप्रसिद्ध शल्य चिकित्सक डॉ. एस. आय. नागराळ यांचे दि. ४/५/२०२० रोजी दुःखद निधन झाले. डॉ. नागराळ हे अतिशय कुशल शल्यचिकित्सक म्हणून नावाजले होते. मुंबईच्या आर. ए. पोद्दार आयुर्वेदीय मेडीकल कॉलेज व संलग्न रुग्णालयात डॉ. नागराळ मानद प्राध्यापक व शल्यचिकित्सक म्हणून कार्यरत होते. तेथील निवृत्ती नंतर डॉ. नागराळ सायन येथील आयुर्वेदीक महाविद्यालयाच्या रुग्णालयात मानद शल्यचिकित्सक म्हणून कार्यरत होते.

डॉ. नागराळ यांच्या मार्गदर्शनाखाली अनेक स्नातकांनी आपले एम.एस. तसेच पीएच.डी. अभ्यासक्रम पूर्ण केले. मिश्र वैद्यकाचे डॉ. नागराळ हे कट्टर पुरस्कर्ते होते. डॉ. नागराळ यांनी नॅशनल इंटीग्रेटेड मेडीकल असोसिएशन व असोसिएशन ऑफ इंटीग्रेटेड मेडीकल स्पेशलिस्ट्स ऑफ इंडियाचे राष्ट्रीय अध्यक्षपद भूषविले होते. राष्ट्रीय शिक्षण मंडळाचा जीवन गौरव पुरस्कार, महर्षी अण्णासाहेब पटवर्धन पुरस्कार यासारखे अनेक पुरस्कार डॉ. नागराळ यांना लाभले होते.

राष्ट्रीय शिक्षण मंडळ, टिळक आयुर्वेद महाविद्यालय, सेंटर फॉर पोस्ट ग्रेज्युएट स्टडीज इन आयुर्वेद, नानल रुग्णालय, आयुर्वेद रसशाळा व आयुर्विद्या मासिक समितीच्या वतीने डॉ. नागराळ यांना साश्रु नयनांनी श्रद्धांजली.





## उपसंपादकीय

### तुज आहे तुजपाशी...

– डॉ. सौ. विनया दीक्षित

कोविड - १९ खूप काही लिहलं, बोललं गेलेला शब्द! सर्वात कमी वेळात संपूर्ण पृथ्वीवर देशोदेशी रोगी किंवा निरोगी व्यक्तींनी ज्याच्यामुळे त्रास-कष्ट भोगले तो कोविड - १९. आकडे सर्वांनाच माहिती आहेत. इतिहास-भूगोलही वेगवेगळ्या माध्यमांतून समजतोय परंतु गेल्या ४-५ महिन्यांच्या या जगदव्यापी महानाट्याचे मर्म उमगले आहे का ?

१) एक विषाणू प्राण्यातून माणसांमध्ये शिरतो. २) मानवी जीवनशैलीच्या आधुनिकतेत चटकन पसरतो व रूतूनच बसतो. ३) क्षणांत तुमच्या शरीरातल्या श्वासावर, रक्ताभिसरणावर ताबा मिळवतो. काहीतरी प्रचंड तांत्रिक बिघाड आणि मग मनुष्यदेहाचे यंत्र-तंत्र निकामीच उरते! ४) कोरोना रोगाचा प्रादुर्भाव, प्रसार-उद्भव, संसर्गानंतर उत्पन्न लक्षण व कमी कालावधीत होणारा अवघ्या काही आठवड्यात मृत्यू! ही साखळीच प्रचंड धडकी भरवणारी. ५) सर्वात पहिल्यांदा जगाच्या इतिहासात सर्व उच्चभू शक्तिशाली, महातंत्रज्ञांना विकसित अशा देशांना सर्वाधिक तडाखा देणारा आजार! ६) निम्नस्तरावरील विकसनशील देशांना त्यामुळे उपलब्ध वैद्यकीय तंत्रज्ञान व सोयी-सुविधांनुसार संपूर्णपणे दहशत माजवणारेच हे महामारीचे वादळ! ७) जातीचे, सुखवस्तुपणाचे किंवा वयाचे कुठलेही भेदभाव न जुमानता सहज कवेत घेणारा हा मृत्यूचाच पाश म्हणून सर्व पृथ्वीवासियांना खडबडून उठवणारा ठरला!

प्राथमिक अभ्यासानंतर अर्वाचीन शास्त्रज्ञांनी निदान चाचणी व उपचार पद्धती तसेच संसर्ग टाळण्यासाठी, रोखण्यासाठी एक प्रणाली त्वरीत विकसित केली तरीही, सर्व सरकारांनी कठोर टाळेबंदीचे उपाय योजले तरी अजूनही ठिकठिकाणी याचा उद्रेक-प्रादुर्भाव होतच आहे. नुकत्याच हाती आलेल्या बातमीनुसार फुफ्फुसांवर याचा घाळा होता हे पूर्ण सत्य नसून रक्तात गुठळी होऊन मनुष्य मृत्यू पावत आहे असे नवे परीक्षण विशेषतः इटलीत केलेल्या शवविच्छेदनाचे अहवाल स्पष्ट करीत आहेत. म्हणजेच हा महामारीचा शत्रू किती अक्राळ-विक्राळ आहे व त्याची अस्त्रे काय आहेत हे अजून पूर्ण उमगलेच नाही तर!

पण या सर्व दुःखद घटनांच्या पार्श्वभूमीवर काही चमत्कारीक व आनंददायी प्रसंगही समोर आलेत. १) शरीराची व मनाची तंदुरुस्ती राखणारे, स्वच्छता व पावित्र्य जपणारे स्वतःला वाचवू शकले. २) मनोनिग्रह व नियमांना वचनबद्ध राहून घरात कुटुंबियांसह काळ व्यतीत करणारे निश्चितच खंबीर योद्धे ठरले आहेत. ३) शरीराची व मनाची व्याधीक्षमता हीच आजारी पडणार का नाही हे ठरवते किंवा या कोविड १९ सारख्या महामारीचा कितपत विनाशकारी परिणाम होणार याचे निर्णायक राखणदार - स्वतःची व्याधी विरुद्ध लढायची मानसिक व शारिरीक शक्तीच आहे हे सिद्ध झाले. ४) आयुर्वेदीय, होमियोपॅथी किंवा योग-निसर्गोपचाराची पायाभूत सिद्धांते जर जीवनशैलीत यथायोग्य पाळली तर आजाराचा मुकाबला बराच सुसह्य आहे. ५) साप साप म्हणून भुई धोपटताना पुन्हा डोळसपणे वेगळ्या बाजूने निदान परीक्षण करणे नेहमीच गरजेचे असते.

भारतीय सनातन संस्कृतीची व राष्ट्रप्रेमाची उत्कृष्ट जाज्वल्य भावना आणि श्रद्धाळू आत्मविश्वासाच्या सकारात्मक जीवनशैलीमुळे १-२ महिन्यांची टाळेबंदी सहजपणे या हजारोकोटींच्या लोकसंख्येने निग्रहाने पाळली, काही अपवाद आहेत पण ते चुकीच्या समजूतीने किंवा अज्ञानामुळेच घडलेले दिसतात. या पूर्ण काळात शैक्षणिक देव-घेव चालू ठेवून सर्व विद्यपीठ व प्राध्यापकांनी अविरत शिक्षणाची कास इंटरनेटच्या उपयोगानेही धरून ठेवली. कुटुंबाची एकता व राष्ट्रीय कर्तव्य या उदात्त समर्पणात दानधर्मही आलाच !

कर्तव्यनिष्ठ पोलीस व सरकारी यंत्रणा, समर्पणाची शपथ घेतलेले आरोग्य सैनिक व घरात बसून नियम पाळून प्रार्थना करणारी प्रजा यांमुळे भारतीय संघशक्तीचे नवे आयाम जगासमोर आले. त्याचबरोबर आयुष चिकित्सा पद्धतीची संरक्षक व रोगप्रतिकारक प्रणाली निश्चितपणे प्रशंसनीय ठरली.

मनामनांवरचे नियंत्रण, शरीर मनाचा समतोल व सुदुर्लभा हेच या महामारी पासून वाचण्याचे खरे नायक आहेत. हे आपल्या संस्कृतीत मूलतः आहेच फक्त आज नव्याने उमगले इतकेच !



रोटरी पुरस्काराने सन्मानित  
आरोग्यदीप  
२०१७ व २०१८



आवाहन!!

\* आरोग्यदीप २०२० \*

प्रकाशित होत आहे.

आपले आरोग्यासंबंधीचे स्वास्थ्य रक्षक लेख, जाहिराती,  
आरोग्य कोडी, पाककृती त्वरीत संपादक मंडळाकडे पाठवा.  
लेख पाठविण्याची शेवटची तारीख १ जून २०२०.

अधिक माहितीसाठी संपर्क -

प्रा. डॉ. अपूर्वा संगोराम (९८२२०९०३०५), प्रा. डॉ. विनया दीक्षित (९४२२५९६८४५)

