

2.6 RESPIRATORY DISEASES

2.6.1 Chronic bronchitis (*Jīrṇa kāsa*)

Introduction

Chronic bronchitis is defined as the presence of chronic productive cough for at least three months in each of two successive years²⁶. Chronic bronchitis, as a cause of chronic obstructive pulmonary disease (COPD) is a significant cause of morbidity, especially in the elderly. Functional impairment of mobility and communication may result from the associated breathlessness and copious respiratory secretions that are produced in chronic bronchitis. Altered mucus secretion in respiratory tracts as a senility change facilitates bacterial adherence. Decreased clearance of the airway due to less effective coughing may predispose to respiratory infection. The prevalence of chronic bronchitis in rural India may be as high as 30% in the over 40 years age group where as in urban India the incidence is around 10%²⁷.

Similarly in *Ayurveda*, a condition in which vitiated *prāṇa vāyu* producing a loud noise as of from a cracked vessel, comes out of the mouth suddenly with expectoration is called *kāsa*. Exposure to smoke, dust etc, consumption of *rukṣa* (non-fatty/ dry) food and suppression of natural urges are the main cause of *kāsa* according to *Ayurveda*.

Aetiology

1. Exposure to dust, fumes, pollutants
2. Respiratory infections
3. Smoking
4. Prolonged use of tobacco

Chronic bronchitis may be associated with other pulmonary diseases such as emphysema, pulmonary fibrosis, bronchial asthma, tuberculosis and sinusitis.



Pathogenesis

The characteristic pathologic features of chronic bronchitis are hyperplasia and hypertrophy of the mucous secreting goblet cell glands and the upper and mid level bronchi. These anatomic airway changes can be quantified pathologically by measurement of goblet cell density, and they are distinct from the smooth muscle changes (asthma) and to alveolar changes (emphysema).

Risk factors

1. Increasing age
2. Smoking (active or passive)
3. Work exposure to toxic chemicals such as silica, cadmium etc.

Clinical features

The following are the most common symptoms of chronic bronchitis

1. Cough
2. Expectoration of mucous
3. Difficulty in breathing
4. Recurrent respiratory infection
5. Decreased exercise tolerance
6. Wheezing

Signs

1. On inspection, barrel shape chest and use of neck muscles (accessory muscles of respiration) during inspiration may be seen.
2. On auscultation specific sounds such as moist rales, crackling and wheezing may be heard that indicate airway narrowing and fluid secretion in the bronchial tubes.

Complications

Potential complications of chronic bronchitis are

1. Pulmonary hypertension



2. Cardiomegaly and heart failure
3. Cardiac arrhythmias
4. Pneumothorax
5. Pneumonia and other opportunistic infections

Investigation

In addition to the complete medical history and physical examination, following investigation should be done

1. Pulmonary function test (PFT)
 - Spirometry
 - Peak flow monitoring
2. Pulse oximetry
3. X-Ray chest (PA view)
4. BAL (Broncho Alveolar Lavage) fluid analysis (if required)
5. CT Scan of lungs, if required
6. Complete haemogram
7. Sputum analysis

Management approaches

a. Prevention

1. Use of *gōdhūma* (wheat), *mudga* (green gram), *kulattha* (horse gram) old rice *paravala* (snake gourd), hot pungent diet, *rasōna* (garlic), *haridrā* (turmeric), *ādraka* (ginger), *kṛṣṇa marica* (black pepper), *miśrī*, (sugar candy), *guḍa* (jaggery), *tulasī* (holy basil), cow's urine, raisins, *śuṅṭhī* (dry ginger), *elā* (cardamom), goat milk, honey, luke warm water, fruits like *āmalakī* and *drākṣā* (grapes) are beneficial
2. Practice of physical and respiratory exercises (*prāṇāyāma* and *yoga*) regularly
3. Use of *cyavanaprāśa/ agastya harītakī* (1 teaspoon with milk in the morning) and *indukānta ghr̥ta* 2 teaspoon with milk after food especially in winter (if the patient is non-diabetic).
4. Use of goat's milk regularly (if possible)



5. Avoid sweets, chilled food items, curd, contaminated water, mustard leaves and incompatible food, oily and fried food
6. Avoid exposure to cold, humid atmosphere, smoke, dust, fuel, pollen, fumes and pollution
7. Avoid chemical and environmental irritants
8. Avoid sleep in day time
9. Avoid tobacco use in any form

b. Medical management

Line of treatment (Ca. Ci.18/32-34)

1. **Nidāna parivarjana (avoidance of aetiological factors)** - To manage the bronchitis causative factors should be avoided first. Smoking, use of tobacco, exposure of dust, fumes, pollutants etc. should be avoided and other pulmonary diseases should be corrected timely.
2. **Samśodhana cikitsā** (Bio-cleansing therapies) followed by **Śamana cikitsā** (Palliative therapy) should be advocated. But it should be decided by physician according to the condition of the patient whether **Śodhana** therapy (Bio-cleansing therapies) should be given or not.
 - i. **Snehana** externally with oil (preferably *Tila taila/ Sarṣapa taila/ Daśamūla taila/ Karpūra taila*) mixed with *Saindhava lavaṇa* .
 - ii. Internal **Snehana** (internal oleation) with medicated *ghṛta* (*Kaṇṭhakārī ghṛta, Vāsā ghṛta, Indukānta ghṛta, Vidāryādi ghṛta, Śaṭphala ghṛta* etc) 50 ml with 2-3 gm *saindhava lavaṇa* daily for 3-7 days before *pañcakarma* (bio cleansing procedure).
 - iii. *Ekāṅga sveda* (hot fomentation), *Sarvāṅga svēda* (steam bath) for 1-2 days
 - iv. *Sneha virechana with Eraṇḍa taila* 10 - 20 ml with half glass of milk at night
3. **Drug therapy**

Numbers of herbal and herbo-mineral preparations are in practice which strengthen the respiratory system and have curative effect in respiratory disorders. The following drugs/ formulations may act as expectorant, bronchodilator and immunomodulator and helpful in patients.



SINGLE DRUGS

Drug	Dosage (per dose)	MOA ^s / Vehicle	Duration*
<i>Vāsā</i> (<i>Adhatoda vasica</i> Nees.) <i>svarasa</i>	10 ml	Honey	15 days
<i>Pippalī</i> (<i>Piper longum</i> Linn.) <i>cūrṇa</i>	1-3 gm	Honey	15 days
<i>Śuṅṭhī</i> (<i>Zingiber officinale</i> Rose.) <i>cūrṇa</i>	1-3 gm	Honey	15 days
<i>Tulasī</i> (<i>Ocimum sanctum</i> Linn.) <i>svarasa</i>	10 ml	Honey	15 days
<i>Ārdraka</i> (<i>Zingiber officinale</i> Rose.) <i>svarasa</i>	10 ml	Honey	15 days
<i>Haridrā</i> (<i>Curcuma longa</i> Linn.) <i>cūrṇa</i>	1 -3 gm	Luke warm water	15 days

COMPOUND FORMULATIONS

Drug	Dosage (per dose)	MOA ^s / Vehicle	Duration*
<i>Sṛṅgyādi cūrṇa</i>	1-2 gm	Honey	15 days
<i>Sitopalādi cūrṇa</i>	2.5 gm	<i>Ghṛta</i> / honey	15 days
<i>Tālīsādi cūrṇa</i>	2.5 gm	Honey	15 days
<i>Trikaṭu cūrṇa</i>	1- 2 gm	Honey/ warm water	15 days
<i>Gōjihvādi kvātha cūrṇa</i>	10-20 gm	Water	15 days
Daśamūla kaṭutraya kaṣāya	15-30 ml	Honey	15 days
Śvāsānandam guṭikā	250-500 mg	Water	15 days
<i>Marīcyādi vaṭī</i>	1.5gm	Chewable	15 days
<i>Khadirādi guṭikā</i>	500mg - 1 gm	Honey	15 days
<i>Lavaṅgādi vaṭī</i>	500mg - 1 gm	Warm water	15 days
<i>Kaṅṭakārī ghṛta</i>	15-30ml	Warm water	15 days
<i>Indukānta ghṛta</i>	3-6 gm	Warm water / milk	15 days



<i>Vidāryādi ghṛta</i>	10 gm	Warm water / milk	15 days
<i>Vāsāvāleha</i>	6 gm	Milk / water	15 days
<i>Cyavanaprāśa</i>	6 gm	Water / milk	15 days
<i>Kaṇṭakāryāvāleha</i>	6 gm	Milk / water	15 days
<i>Kanakāsava</i>	12-24 ml	Water	15 days
<i>Causaṭa praharī pippalī</i>	125mg - 250mg	Honey	15 days

^s MOA - Mode of administration

*Initially 2 times in a day after meal for 15 days followed by condition of patient and physician's direction

NOTE: Out of the drugs mentioned above any one of the drug or in the combination may be prescribed by the physician. The duration of the treatment may vary from patient to patient. Physician should decide the dosage (per dose) and duration of the therapy based on the clinical findings and response to therapy.

The following *rasāyana* medicines (rejuvenators) may be used to strengthen respiratory system (these may be employed for about 30 days and repeated after 4-6 months)

<i>Cyavanaprāśa</i>	5 - 10 gm	Before breakfast and at bedtime with milk boiled with 1gm <i>śuṅṭhī</i> / <i>haridrā cūrṇa</i>
<i>Agastya harītakī rasāyana</i>	5 - 10 gm	Before breakfast and bedtime with milk boiled with 1gm <i>śuṅṭhī</i> / <i>haridrā cūrṇa</i>
<i>Drākṣāvāleha</i>	5 - 10 gm	Before breakfast and bedtime with Milk boiled with 1gm <i>śuṅṭhī cūrṇa</i>
<i>Indukānta ghṛta</i>	5 - 10 gm	With milk after food

Bṛhatī (*Solanum indicum*) and *Kaṇṭakāri* (*Solanum xanthocarpum*)²⁸, *Cyavanaprāśa*²⁹, *Kaṭukī* (*Picrorhiza kurroa*)³⁰ and *Vibhītakī* (*Terminalia belerica*)³¹ powder have shown improvement in the COPD patients.

c. Yogic practices- The following *yogic* practices are beneficial in chronic bronchitis; however, these should be performed only under the guidance of qualified *Yoga therapist*. Duration should be decided by the *yoga therapist*.

1. *Kuñjala* with lukewarm water, *Jalaneti*



2. *Sūrya namaskāra, Śavāsana, Sarvāṅgāsana, Maṇḍūkāsana, Gomukhāsana, Trikoṅāsana, Ardhaḥaṭicakrāsana*
3. Deep relaxation techniques, *Yoga nidrā*

Counselling - Advice the patient to

1. Practice breathing (*prāṇāyāma*) and other regularly exercises
2. Drink plenty of fluids
3. Use lukewarm water in place of cold water
4. Add garlic, turmeric, holy basil, clove etc. in diet
5. Take nutritious diet rich in antioxidants, potassium, magnesium, selenium and zinc
6. Avoid allergic food and exposure to irritants like air pollution, fume, pollen etc.
7. Don't reside in humid, damp, dusty and smoky atmosphere
8. Avoid tobacco consumption in any form

Indications for referral

1. Patients not responding to therapy
2. Patient with acute respiratory distress/ failure
3. Patients with acute pulmonary infection
4. Patient with cardiac disease

COSTING DETAILS

Approx. costing of Chronic Bronchitis (Jīrṇa Kāsa)

S.No.	Medicine	Requirement	Unit	Rate in Rs.	Cost in Rs.
1.	<i>Haridrā cūrṇa</i>	30-60	gm	0.3	9-18
2.	<i>Pippalī cūrṇa</i>	30-60	gm	0.6	18-36
3.	<i>Śuṅṭhī cūrṇa</i>	30-60	gm	0.5	15-30
4.	<i>Tulasī svarasa</i>	300	ml	0.50	150
5.	<i>Ārdraka svarasa</i>	300	ml	1.0	300



6.	<i>Sr̥ṅgyādi cūrṇa</i>	30-60	gm	1.75	52-104
7.	<i>Sitopalādi cūrṇa</i>	75	gm	1.12	85
8.	<i>Tālīsādi cūrṇa</i>	75	gm	0.58	44
9.	<i>Trikaṭu cūrṇa</i>	60-120	gm	2.3	138-276
10.	<i>Gōjivhādi kvātha cūrṇa</i>	300-600	gm	0.5	150-300
11.	<i>Daśamūla kaṭutraya kaṣāya</i>	450-900	ml	0.32	145-290
12.	<i>Śvāsānandam guṭikā</i>	7.50-15.00	gm	5.3	40-80
13.	<i>Maricyādi vaṭī</i>	45	gm	1.8	83
14.	<i>Khadirādi guṭikā</i>	15-30	gm	1.6	24-48
15.	<i>Lavaṅgādi vaṭī</i>	15-30	gm	1.4	21-42
16.	<i>Kaṇṭakārī ghr̥ta</i>	450-900.	ml	0.345	156-311
17.	<i>Indukānta ghr̥ta</i>	90-180	gm	0.45	41-82
18.	<i>Vāsāvāleha</i>	180	gm	0.33	60
19.	<i>Cyavanaprāśa</i>	360	gm	0.25	90
20.	<i>Kaṇṭakāryāvāleha</i>	180	gm	0.36	65
21.	<i>Agastya harītakī rasāyana</i>	180	gm	0.30	54
22.	<i>Drākṣāvāleha</i>	180	gm	0.24	72
23.	<i>Kanakāsava</i>	375-750	ml	0.14	53-106
24.	<i>Causaṭa praharī pippalī</i>	3.75-7.5	gm	1.4	5.25-11

Approx. costing of *Pañcakarma* procedure in Chronic bronchitis **

S.No.	<i>Pañcakarma</i> procedure	Days	Rate in Rs./ day	Cost in Rs.
1.	<i>Snehapāna package</i>	3-7	-	750
2.	<i>Snehana externally</i>	1-2	200	200-400
3.	<i>Sarvāṅga sveda</i>	1	100	100
4.	<i>Virecana package</i> (including preparatory and post therapeutic procedures)	11	-	1000

