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 years. 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 whereas in urban India the incidence is around 10%.

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 kāśa. Exposure to smoke, dust etc., consumption of rukṣa (non-fatty/dry) food and suppression of natural urges are the main cause of kāśa 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), ārdraka (ginger), kṛṣṇa marica (black pepper), miśrī, (sugar candy), guḍa (jaggery), tulasī (holy basil), cow's urine, raisins, śuṇṭhī (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 harītaki (1 teaspoon with milk in the morning) and indukānta ghṛta 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. Saṃśodhana 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 (Kaṇṭakārī ghṛta, Vāsā ghṛta, Indukānta ghṛta, Vidāryādi ghṛta, Śatphala ghṛta etc) 50 ml with 2-3 gm Saindhava lavaṇa daily for 3-7 days before pañcakarma (bio cleansing procedure).

   iii. Ekaṅga 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

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

### COMPOUND FORMULATIONS

<table>
<thead>
<tr>
<th>Drug</th>
<th>Dosage (per dose)</th>
<th>MOA*/ Vehicle</th>
<th>Duration*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Śṛṅgyādi cūrṇa</td>
<td>1-2 gm</td>
<td>Honey</td>
<td>15 days</td>
</tr>
<tr>
<td>Sitopalādi cūrṇa</td>
<td>2.5 gm</td>
<td>Ghṛta/ honey</td>
<td>15 days</td>
</tr>
<tr>
<td>Tālīsādi cūrṇa</td>
<td>2.5 gm</td>
<td>Honey</td>
<td>15 days</td>
</tr>
<tr>
<td>Trikaṭu cūrṇa</td>
<td>1- 2 gm</td>
<td>Honey/ warm water</td>
<td>15 days</td>
</tr>
<tr>
<td>Gōjihvādi kvātha cūrṇa</td>
<td>10-20 gm</td>
<td>Water</td>
<td>15 days</td>
</tr>
<tr>
<td>Daśamūla kaṭutraya kaśāya</td>
<td>15-30 ml</td>
<td>Honey</td>
<td>15 days</td>
</tr>
<tr>
<td>Śvāśānandam guṭikā</td>
<td>250-500 mg</td>
<td>Water</td>
<td>15 days</td>
</tr>
<tr>
<td>Marīcyādi vaṭī</td>
<td>1.5gm</td>
<td>Chewable</td>
<td>15 days</td>
</tr>
<tr>
<td>Khadirādi guṭikā</td>
<td>500mg - 1 gm</td>
<td>Honey</td>
<td>15 days</td>
</tr>
<tr>
<td>Lavaṅgādi vaṭī</td>
<td>500mg - 1 gm</td>
<td>Warm water</td>
<td>15 days</td>
</tr>
<tr>
<td>Kanṭakārī ghṛta</td>
<td>15-30ml</td>
<td>Warm water</td>
<td>15 days</td>
</tr>
<tr>
<td>Indukānta ghṛta</td>
<td>3-6 gm</td>
<td>Warm water / milk</td>
<td>15 days</td>
</tr>
</tbody>
</table>
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)

<table>
<thead>
<tr>
<th>Rasāyana</th>
<th>Dosage</th>
<th>Administered with</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vidāryādi ghṛta</td>
<td>10 gm</td>
<td>Warm water / milk</td>
<td>15 days</td>
</tr>
<tr>
<td>Vāsāvaleha</td>
<td>6 gm</td>
<td>Milk / water</td>
<td>15 days</td>
</tr>
<tr>
<td>Cyavanaprāśa</td>
<td>6 gm</td>
<td>Water / milk</td>
<td>15 days</td>
</tr>
<tr>
<td>Kaṭṭakāryāvaleha</td>
<td>6 gm</td>
<td>Milk / water</td>
<td>15 days</td>
</tr>
<tr>
<td>Kanakāsava</td>
<td>12-24 ml</td>
<td>Water</td>
<td>15 days</td>
</tr>
<tr>
<td>Causaṭa praharī pippalī</td>
<td>125mg - 250mg</td>
<td>Honey</td>
<td>15 days</td>
</tr>
</tbody>
</table>

ⅅ MOA - Mode of administration

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)

- **Cyavanaprāśa**: 5 - 10 gm
  - Before breakfast and at bedtime with milk boiled with 1gm śuṇṭhī/ haridrā cūrṇa

- **Agastya harītakī rasāyana**: 5 - 10 gm
  - Before breakfast and bedtime with milk boiled with 1gm śuṇṭhī / haridrā cūrṇa

- **Drāksāvaleha**: 5 - 10 gm
  - Before breakfast and bedtime with Milk boiled with 1gm śuṇṭhī cūrṇa

- **Indukānta ghṛta**: 5 - 10 gm
  - With milk after food

*Bṛhatī (Solanum indicum) and Kaṭṭakāri (Solanum xanthocarpum)²⁸, Cyavanaprāśa²⁹, 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. **Kuṇjala** with lukewarm water, Jalaneti
2. *Sūrya namaskāra*, Śavāsana, Sarvāṅgāsana, Maṇḍūkāsana, Gomukhāsana, Trikoṇāsana, Ardhaṅgaṅkarāśana

3. Deep relaxation techniques, *Yoga nīdṛś*

**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)**

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

**AYURVEDIC MANAGEMENT OF SELECT GERIATRIC DISEASE CONDITIONS**
<table>
<thead>
<tr>
<th>S.No.</th>
<th>Pañcakarma procedure</th>
<th>Days</th>
<th>Rate in Rs./ day</th>
<th>Cost in Rs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Snehapāna package</td>
<td>3-7</td>
<td>-</td>
<td>750</td>
</tr>
<tr>
<td>2.</td>
<td>Snehana externally</td>
<td>1-2</td>
<td>200</td>
<td>200-400</td>
</tr>
<tr>
<td>3.</td>
<td>Sarvāṅga sveda</td>
<td>1</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>4.</td>
<td>Virecana package</td>
<td>11</td>
<td>-</td>
<td>1000</td>
</tr>
</tbody>
</table>

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

Approx. costing of Pañcakarma procedure in Chronic bronchitis **