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Chronic bronchitis and homoeopathic management

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Abstract
Chronic bronchitis is inflammation and irritation of the bronchial tubes. Chronic bronchitis is the most common disease which causes absenteeism from work and most patient visits to hospitals. It is acknowledged by the WHO as the fourth commonest cause of death worldwide, with a mortality rate increase predicted for the next 20 years. In India, Chronic Bronchitis is the commonest lung disorder following pulmonary tuberculosis and is equally prevalent in rural and urban areas. Homoeopathic treatment should aim to control and prevent from running into complications.

Keywords: Chronic bronchitis, repertory, homoeopathy

1. Introduction
Chronic bronchitis was defined epidemiologically as 'a cough productive of sputum for at least 3 months of 2 consecutive years [1]. Chronic bronchitis is a common but variable phenomenon in chronic obstructive pulmonary disease. It has numerous clinical consequences, including an accelerated decline in lung function, greater risk of the development of airflow obstruction in smokers, a predisposition to lower respiratory tract infection, higher exacerbation frequency, and worse overall mortality [2]. In India Chronic Bronchitis is the commonest lung disorder following pulmonary tuberculosis and is equally prevalent in rural and urban areas [3].

2. Epidemiology
The occurrence of chronic bronchitis in the general population has been documented to vary between 3% to 7% of healthy adults. However, it is estimated to be as high as 74% among those diagnosed to have Chronic Bronchitis. It has been documented that subjects under the age of 50 years who are otherwise healthy and have chronic bronchitis are at a higher risk of morbidity and mortality when compared to healthy subjects. The increasing prevalence of chronic bronchitis is thought to be associated with increasing age, tobacco smoking, occupational exposure, and socioeconomic status [4].

3. Aetiology
- **Tobacco Smoking:** Tobacco smoking is the single-most important and the most prevalent risk factor for the development of Chronic Bronchitis. Inhaled smoke in conjunction with underlying host susceptibility and environmental factors produces Chronic Bronchitis in 15% of smokers. Prolonged cigarette smoking impairs ciliary movement, produces hypertrophy and hyperplasia of mucus secreting glands. It also inhibits antiproteases and causes neutrophils to release proteolytic enzymes.
- **Environmental Pollution:** The incidence of Chronic Bronchitis is higher in heavily industrialised urban areas. Episodes of exacerbation of Chronic Bronchitis correlate with periods of heavy pollution with sulphur dioxide and particulate matter. In India, indoor pollution caused by burning of cow-dung cakes and use of wood for cooking are important contributory factors.
- **Occupation:** Chronic Bronchitis is frequently observed in persons who are engaged in occupations exposing them to either organic or inorganic dusts or to noxious gases.
- **Respiratory Infections:** Infections are often the precipitating cause of acute exacerbations of Chronic Bronchitis (AECB) and contribute significantly to morbidity and mortality. Release of enzymes from the neutrophils found during infections may contribute to the lung damage. Viral respiratory infections in infancy may cause airways obstruction in later life.
- **Familial and Genetic Factors:** Familial aggregation of chronic bronchitis has been well demonstrated and may be partly related to indoor air pollution and passive smoking.

- Few studies of monozygotic twins have suggested some genetic predisposition to the development of chronic bronchitis, independent of indoor pollution and passive smoking. The protease inhibitor (Pi) alpha-1-antitrypsin (α1-AT) is an acute phase reactant and a potent inhibitor of serine proteases. Its serum level rises in association with many inflammatory reactions in all individuals except homozygotes. α1-AT deficiency is the strongest genetic factor causally related to the development of Chronic Bronchitis [3].

4. Risk factors
- Cigarette smoking
- Exposure to toxic fumes and gases
- Gender and socioeconomic status
- Asthma [8]
- Protease inhibitor deficiency
- Air pollution
- Occupation
- Chronic broncho pulmonary infection
- Growth and nutrition [8]

5. Pathophysiology
Chronic Bronchitis has both pulmonary and systemic components. The changes in pulmonary and chest wall compliance mean that collapse of intrathoracic airways during expiration is exacerbated, during exercise as the time available for expiration shortens, resulting in dynamic hyperinflation. Increased V/Q mismatch increases the dead space volume and wasted ventilation. Flattening of the diaphragmatic muscles and an increasingly horizontal alignment of the intercostal muscles place the respiratory muscles at a mechanical disadvantage. The work of breathing is therefore markedly increased, first on exercise but, as the disease advances, at rest too [5].

The most consistent pathological finding in Chronic Bronchitis is increased numbers of mucus-secreting goblet cells in the bronchial mucosa, especially in the larger bronchi. In more advanced cases, the bronchi become overtly inflamed and pus is seen in the lumen. Microscopically, there is infiltration of the walls of the bronchi and bronchioles with acute and chronic inflammatory cells; lymphoid follicles may develop in severe disease. In contrast to asthma, the lymphocytic infiltrate is predominantly CD8+. The epithelial layer may become ulcerated and, with time, squamous epithelium replaces the columnar cells. The inflammation is followed by scarring and thickening of the walls which narrows the small airways. The small airways are particularly affected early in the disease, initially without the development of any significant breathlessness. This initial inflammation of the small airways is reversible and accounts for the improvement in airway function if smoking is stopped early. In later stages the inflammation continues, even if smoking is stopped [6].

6. Symptoms
The patient with predominantly chronic bronchitis usually presents with a history of cough and sputum production for many years along with a history of heavy tobacco smoking. Initially, the cough is present only during winter months. Over the years the cough becomes continuous and episodes of illness increase in frequency, duration and severity. With severe degree of airways obstruction, the patient experiences exertional dyspnoea. Occasionally, the patient seeks medical help after the onset of peripheral oedema secondary to overt right ventricular failure. Patients with chronic bronchitis are overweight and cyanotic. Because of this appearance these patients are referred to as 'blue-bloaters'. The percussion note is normally resonant. Medium to coarse crepitations and rhonchi, which change in location and intensity after a deep and productive cough, are heard on auscultation [3].

Dyspnea is the major cause of disability in Chronic Bronchitis. It arises from a sense of increased muscle effort to breathe in relation to the level of ventilation achieved. Normal subjects, even at the most strenuous levels of exercise, use only 60 to 70% of their maximum voluntary ventilation and never experience dyspnea comparable to that of diseased patients [7].

7. Signs
In mild Chronic Bronchitis there may be no signs or just quiet wheezes throughout the chest. In severe disease, the patient is tachypnoeic, with prolonged expiration.(6)

8. Invstigation
- Pulmonary function test - The most important test is spirometry. Measurement of lung volumes and diffusing capacity, which generally requires a specialised laboratory, may also be helpful, particularly in determining whether the airflow limitation is due to emphysema or to airways disease.
- X-ray
- CT scan
- Sputum examination [6].

9. Differential diagnosis
- Asthma
- Bronchiectasis
- Cystic fibrosis
- Bronchopulmonary mycosis
- Central airflow obstruction [10].

10. General Management

10.1 Stable Phase chronic bronchitis
Only three interventions—smoking cessation, oxygen therapy in chronically hypoxemic patients, and lung volume reduction surgery in selected patients with emphysema—have been demonstrated to influence the natural history of patients with Chronic Bronchitis. The institution of these therapies should involve an assessment of symptoms, potential risks, costs, and benefits of therapy. This should be followed by an assessment of response to therapy, and a decision should be made whether or not to continue treatment.

10.2 Pharmacotherapy
- **Smoking Cessation:** patients with Chronic Bronchitis should be strongly urged to quit smoking and educated about the benefits of quitting.
- **Bronchodilators:** Bronchodilators are used for symptomatic benefit in patients with Chronic Bronchitis.

10.3 Non-pharmacologic therapies
- **Pulmonary Rehabilitation:** In Chronic Bronchitis, pulmonary rehabilitation has been demonstrated to

improve health- related quality of life, dyspnea, and exercise capacity.
- **Nutrition:** Simple screening includes measurements of body mass index (BMI; kg/m2) and weight change. Nutritional therapy should be combined with exercise or other anabolic stimuli [11].

10.4 Acute exacerbation of chronic bronchitis
- **Oxygen therapy:** Controlled oxygen therapy monitored by serial arterial blood gas measurements, Bronchodilator therapy, Corticosteroids, Diuretic therapy, Appropriate antibiotic therapy, Respiratory stimulants.
- **Physiotherapy:** Chest physiotherapy helps in patients who are drowsy because of carbon dioxide narcosis.
- **Mechanical ventilation:** when the patient is deteriorating despite maximum therapy [3].

11. Homoeopathic repertory
Chronic Bronchitis has been found to be represented with certain remedies in the following repertories.

11.1. Boger Boenninghausen's Characteristic Material Medical & Repertory: [12].

Chest - Inner - Bronchia Bronchitis, Etc

ACON. ant-t. *Arn.* ARS. bar-c. BELL. BRY. *Calc.* CAPS. CARB-V. *Caust.* CHAM. CHIN. *Cina* con. DROS. DULC. *Euphr.* ferr. HEP. HYOS. *Ign. Ip. Kali-bi. Lach.* lyc. mag-c. mang. MERC. nat-c. nat-m. NUX-V. petr. ph-ac. PHOS. PULS. RHUS-T. sabad. *Sep. Sil.* SPIG. SPONG. squil. STANN. *Staph.* stram. SULPH. *Verat.* VERB.

Cough - In general

ACON. agar. agn. *Alum.* am-c. *Am-m. Ambr.* anac. ang. ant-c. *Ant-t. Arg-met.* arg-n. *Arn.* ARS. asaf. asar. aur. bar-c. BELL. *Bism.* borx. bov. BRY. calad. CALC. camph. canth. caps. *Carb-an.* CARB-V. *Caust.* CHAM. *Chin.* cic. *Cina* clem. cocc. coff. colch. coloc. CON. croc. *Cupr.* cycl. *Dig.* DROS. DULC. euphr. *Ferr.* graph. guaj. hell. HEP. HYOS. IGN. IOD. IP. KALI-BI. *Kali-c.* kali-n. *Kreos. Lach. Laur. Led.* LYC. mag-c. mag-m. mang. meny. *Merc.* mez. mosch. mur-ac. *Nat-c.* nat-m. *Nit-ac.* nux-m. NUX-V. olnd. *Op. Par.* petr. *Ph-ac.* PHOS. phyt. plat. *Plb.* PULS. ran-b. ran-s. rheum *Rhod. Rhus-t. Ruta Sabad.* sabin. *Samb.* sars. sec. sel. *Seneg.* SEP. *Sil.* spig. *Spong. Squil.* STANN. *Staph.* stram. *Stront-c.* sul-ac. SULPH. tab. tarax. teucr. *Thuj.* VERAT. verb. *Zinc.*

Cough - Chronic

am-m. caust. form. ign. *Kali-i.* lyc. nat-m. *Sil.* spong.

11.2 Kent's repertory [13]

Cough, irritation:

Acon, apis, asaf, asar, benz-ac, bell, *brom, calc, camph,* chlor, cina, coff, con, cor-r, croc, dig, dulc, graph, *hep,* ip, lach, *kali-bi,* mag-m, ment, meny, meph, merc-i-f, nat-s, olnd, op, plb, *puls,* prun-s, **Rumx,** squil, stict, ter, verb.

11.3 A Concise repetory of homoeopathic medicines' – Phatak [14].

Bronchitis

Ant-t. ars. *Bry.* calc. dros. *Ferr-p.* hep. hydr. *Ip. Lyc.* nat-s. *Phos.* puls. sang. senec. sil. spong. stann. stict. sulph.

11.4 Homoeopathic materia medica & repertory, boericke: [15].

Respiratory system - Bronchitis - Chronic

alum. alumn. *Am-c.* am-caust. am-i. am-m. *Ammc.* ant-ar. ant-i. *Ant-s-aur. Ant-t. Ars. Ars-i.* bac. *Bals-p.* bar-c. *Bar-m. Calc.* calc-i. calc-sil. canth. carb-an. *Carb-v.* cean. chel. *Chin.* coc-c. con. *Cop.* cub. dig. dros. *Dulc.* erio. eucal. grin. *Hep.* hydr. hyos. ichth. iod. *Ip. Kali-bi.* kali-c. kali-hp. *Kali-i.* kali-s. kreos. lach. *Lyc. Merc.* myos-s. myrt-ch. nat-m. nat-s. *Nit-ac.* nux-v. phos. pix *Puls.* rumx. sabal sang. sec. *Seneg.* sep. *Sil.* silphu. spong. *Squil. Stann.* stry. *Sulph.* tax. ter. tub. verat.

11.5 Robin murphy's homoeopathic medical repertory [16]

Lungs - Bronchitis, infection - chronic

Alum. alumn. *Am-c.* am-caust. am-i. am-m. *Ammc.* ant-ar. *Ant-s-aur.* **ANT-T.** *Ars. Ars-i. Bac. Bals-p.* bar-c. *Bar-m. Calc.* calc-i. calc-sil. *Canth.* carb-an. *Carb-v.* cean. chel. chin. coc-c. con. *Cop.* cub. dig. dros. *Dulc.* erio. eucal. grin. *Hep. Hydr.* hyos. ichth. iod. *Ip. Kali-bi.* kali-c. *Kali-i.* kali-s. kreos. lach. *Lyc.* merc-sul. myos-s. myrt-c. nat-m. nat-s. *Nit-ac.* nux-v. phos. pix *Puls.* rumx. sabad. sabal sang. sec. *Seneg.* sep. sil. silphu. spong. squil. *Stann.* stry. *Sulph.* tax. ter. tub. verat.

11.6 Synthesis repertory [17].

Cough - irritation; from - Bronchi; in

aesc. *Anac.* arg-met. asc-t. carbn-s. chlor. cocc. con. cub. *Dros.* ind. ip. *Kali-bi.* kali-n. ketogl-ac. *Lach. Lyc.* phyt. *Sang.* squil. trif-p. verat. *Vero-o.*

12. Homoeopathic management

12.1 Antimonium tartaricum

Cough excited by violent tickling in trachea. A child cough when angry. Paroxysms of coughing, with suffocation obstruction of respiration. Dyspnea, compelling one to sit up. Shortness of breathing from suppressed expectoration. Cough, with vomiting of food, after a meal. Hollow cough, rattling of mucus in the chest. Cough with expectoration of mucus, sometimes at night only, chiefly after midnight [18].

12.2 Arsenicum album

Chronic bronchitis of the aged. Difficulty of breathing continues during the intervals upon coughing, and returns periodically, especially at night; bronchial secretion scanty, titillation in the trachea and under the sternum, chiefly at night, provoking a dry wheezing, often very violent cough, followed after a while by expectoration of a white, frothy, sometimes sticky mucus, followed by an increase of difficulty of breathing; aggravation after eating and in the afternoon; emaciation; < about and after midnight, from lying down, from drinking cold water, from mental excitement [19].

12.3 Bryonia

Cough, dry at night; must sit up; worse after eating or drinking, vomiting with stitches of pain in the chest and expectoration of rust coloured sputum. Frequent desire to take a long breath; must expand lungs. Difficult, quick expectoration; worse every movement; caused by stitches in the chest. Cough with a sensation as if the chest would fly to pieces; presses the hand on the sternum; must support the chest. Tough mucus in the trachea, loosened only after

hawking. Coming into a warm room excites cough [20].

12.4 Drosera
Spasmodic cough, gagging and retching, vomiting. Tickling and crawling in the larynx brings on cough. Feather like sensation in the larynx brings on cough. Hoarseness and barking sound during chest. Bearing down sensation on the chest, stitching and stinging pains during attack of cough. Compression of chest [21].

12.5 Hepar sulph
Mostly indicated when the cough enters the stage of resolution; a rattling, choking, moist cough, depending on the organic or catarrhal basis; < towards morning and fter eating; fatiguing, hollow cough as soon as he uncovers any part of his body. Bronchiectasis, with dirty yellow, foul sputum [19].

12.6. Kalium bichrmoicum
Cough violent, rattling, with gagging from viscid mucus in throat, <when undressing.
Cough hoarse, metallic, with expectoration of tough or fibro elastic casts in morning on awakening with dyspnea, > lying down [22].

12.7 Lycopodium
Distressing, fatiguing, tickling cough, < afternoon and evening, and ongoing to sleep and in the morning; chronic bronchitis, with copious muco-serous or broncho- purulent sputa; congestion of liver, flatulency, constipation, cachectic complexion, red gravel, acid dyspepsia, dry cough, dilation of air tubes and senile catarrh; respiration short before and during cough, ending with loud belching; salty expectoration; emaciation of upper part of body; great fear of solitude [19].

12.8 Phosphorous
Sub-acute attacks of bronchitis in emaciated, cachectic, or young overgrown invalids; broncho pulmonary catarrhs from dilation or fatty degeneration of heart. Cough abrupt, rough, sharp, dry; between each coughing spell a short interval; dry, ticking cough in the evening, with tightness across the chest and expectoration in the morning; pain chest while coughing, relieved by external pressure; trembling of the whole body while coughing; cough gets worse when other people come into the room; tingling, soreness, and rawness in the air passages; dry cough with expectoration of viscid or bloody mucus. Dilation of bronchi [19].

12.9 Pulsatilla
In the chest there is a feeling of soreness referred to the right or the left subclavian region, or to the apex of one or the other lung. This soreness is felt, when the patient lies on the affected side, or presses against the chest. Along with the soreness of lung there may be cough with expecteration [21].

12.10 Silica
Bronchial affections of rachitic children; obstinate cough, provoked by cold drinks, with copious transparent, or purulent expectoration; pains, soreness and weakness of the chest, relieved by inhaling moist warm air; laryngeal morning cough commencing immediately on raising, with tough gelatinous and very tenacious expectoration; loss of breath when lying on back or stooping; cough provoked by cold drinks; expectoration of pus, which when thrown into water falls to the bottom and spreads like a heavy sediment [19].

12.11 Stannum Metalicum
Bronchial dilation and profuse purulent expectoration; weak feeling in the chest after expectorating or talking; excessive muco purulent expectoration, greenish, with a sweetish taste, more likely salty [19].

12.12 Sulphur
Inveterate bronchitis, with arterial and venous vascular irritability; great impressionability of the skin, which suffers from the slightest atmospheric variations, with exacerbations of all pleural symptoms; chronic catarrhs of long standing, with secretion of large quantities of tenacious mucus. Suffocation with palpitation; pains in chest during cough, aggravated by the horizontal position; cough with nausea and vomiting; heaviness of head and dim vision; sensation as of ice in chest, whenever chilled, or perspiration is checked [19].

13. Conclusion
Homoeopathy is having much efficacy in treating chronic bronchitis because of its individualistic approach to treat the sick with dynamic and potentised medicines. In homoeopathy along with the disease condition, the man in disease is treated considering mind and body known holistic treatment. Individualization plays a major role in Homoeopathic prescription.

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