Bronchopulmonary obstruction due to excessive mucus secretion:

**Role of Sodium 2-mercaptoethane sulphonate (MISTABRON)**

Nirjhar Chatterjee  
Global Medical Advisor  
UCB SA Pharma Sector  
Belgium
• The wall of the trachea and bronchus is covered by ciliated cells and caliciform mucous cells.
• 100 ml of mucus is secreted in 24 hours
• 2 mucus layers can be identified, a deeper watery layer and a superficial viscous layer
What is Mucus?

“In normal airways, mucus production is maintained at a relatively low level, whereas in pathological conditions, such as asthma, cystic fibrosis and chronic bronchitis, mucus hypersecretion may cause major problems in airway clearance, resulting in impaired gas exchange and bacterial colonisation leading to infection & lung damage.”

Causes of changes in bronchial secretions

- Tracheotomy
- Assisted ventilation
- Pollution, tobacco, alcohol
- Viral or microbial infection
- Inflammation
- Dyskinesia
- Inability to cough (tetraplegic)
- Thoracic or abdominal pain
- Endoprosthesis
Clinically

- Respiration deteriorates
- Breathing difficulties
- Non productive cough
- Restricted movement of chest wall
- Cyanosis and dyspnoea
- Oxygen saturation levels deteriorate
Fluidification of secretions

• The need for a mucolytic drug is imperative
  – in case of dry and sticky secretions
• The best local mucolytic is the MISTABRON, for several reasons
  – Rapidity
  – Efficacy
  – Tolerance
  – No effect on cilia
MISTABRON is instilled diluted at 50% in saline

Effect of MISTABRON on mucus plug

Effect of MISTABRON on clot
MISTABRON: Disrupting Mucus Bonds

- HS - CH₂ - CH₂ - SO₃⁻ - Na⁺

Ruptures the disulfide bonds (most resistant)

Fragmentation of mucus glycoproteins

Ruptures the ionic bonds

Ruptures bivalent bonds

Dissolution of released fragments
MISTABRON: Potency

MISTABRON provides a % of mucus dissolution about 3x higher than NAC.
MISTABRON: Onset of Action

Given the same conditions & concentrations, mucolysis is obtained 5x more rapidly with MISTABRON than with NAC.
MISTABRON indications

- **Nebulisation of MISTABRON** facilitates expectoration & prevents pulmonary complications bronchial clogging in:
  - Ch bronchitis/bronchial emphysema
  - Atelectasis
  - Bronchiectasis
  - Cystic fibrosis
  - Bronchopulmonary obstruction due to mucus
  - Post-operative patients

- **Instillation of MISTABRON** in those who cannot cough - to facilitate bronchial aspiration in ICU anaesthetised/unconscious patients
Posology of MISTABRON

NEBULIZATION IN ADULTS AND CHILDREN ABOVE 12 YEARS
- 3 to 6 ml per day in 4 sessions (for a period of a few days to several weeks as required)
- MISTABRON should be used undiluted or diluted, with saline or distilled water (with a max of 6 ml pure product at one go and 26 ml per day)

INSTILLATION IN ADULTS AND CHILDREN ABOVE 12 YEARS
- 1 to 2 ml of diluted solution every hour until fluidisation and evacuation of the secretions with a max of 3 ml at one go and 26 ml per day.

POSOLOGY FOR CHILDREN FROM 7 UP TO 12 YEARS
- 1/2 dose

POSOLOGY FOR CHILDREN FROM 1 UP TO 7 YEARS
- 1/4 dose

POSOLOGY FOR BABIES UP TO 1 YEAR
- 1/8 dose
MISTABRON: Safety Profile

MISTABRON is in the market for 30 years

MISTABRON is well tolerated whether administered by instillation or by aerosol.

MISTABRON is safe for long-term administration (Federeci 1992).

MISTABRON can be safely used in children and neonates (Dab 1993)
Mistabron for excess mucus