

## Comparative Study of Inhaled Levosalmotamol and Inhaled Salbutamol in Bronchial Asthma



### Medical Science

**KEYWORDS :** Salbutamol, LevoSalbutamol, Spirometry.

**Dr. Anjali P. Ghare**

M.D. (Tuberculosis and Respiratory Diseases)

#### ABSTRACT

*Objects:*

- 1] To study pulmonary function test abnormalities in patients suffering from bronchial asthma.
- 2] To assess the reversibility of broncho constriction after inhalation of Salbutamol and Levosalbutamol.
- 3] To study comparative response of reversibility of broncho constriction with inhaled Salbutamol and LevoSalbutamol.

*Materials and Methods:*

100 selected patient of bronchial asthma evaluated for efficiency of inhaled LevoSalbutamol and inhaled Salbutamol.

In selected patient bronchial spirometry done with computerized med graphics spirometer.

*Results:*

This study showed both inhaled Salbutamol and inhaled levoSalbutamol are effective bronchodilators in asthma patient with almost similar response.

*Conclusion:* Overall improvement in lung functions with LevoSalbutamol and Salbutamol was almost similar.

**Introduction:**

Asthma is a disease that has become increasing common over last century and now a day's common cause of disability.

The incidence of asthma has increased dramatically over 2-3 decade in industrialized nation as a result exposure to air pollution<sup>1</sup>. "Asthma is a chronic relapsing inflammatory disorder characterized by hyperactive airways leading to the episodic reversible broncho constriction owing to increase responsiveness of tracheo-bronchial tree to various stimuli<sup>2,3</sup>."

This study was designed to compare effect of Inhaled LevoSalbutamol and Inhaled Salbutamol in bronchial asthma patient.

**Aims & Objectives:**

- 1] To study pulmonary function test abnormalities in patients suffering from bronchial asthma.
- 2] To assess the reversibility of broncho constriction after inhalation of Salbutamol and Levosalbutamol.
- 3] To study comparative response of reversibility of broncho constriction with inhaled Salbutamol and LevoSalbutamol.

**Materials and Methods:**

In selected 100 patients of Bronchial asthma. Spirometry done with computerized spirometer. In 50 patients 100 microgram of LevoSalbutamol given by MDI and another 50 patients 200 microgram Salbutamol was given by MDI.

PFT performed after 15 minutes to record bronchodilator values.

**Results:**

LevoSalbutamol and Salbutamol produced significantly better bronchodilator response. Both drugs showed equivalent time dependent bronchodilator response measured by PFT.

**Discussion:**

The data of Salbutamol and LevoSalbutamol were compared. PFT parameters of both drugs compared.

The maximum number of patients in this study was in between 40 to 50 years of age group.

The function defect to all asthma is obstruction of airflow

dynamic and static which may either continuous with variable severity or apparently episodic, Influenced by age disease duration<sup>3</sup>.

From this primary abnormality was obstruction and other pathophysiological mechanism.

- Disturbances in work of breathing.
- Lung mechanics.
- Lung volumes.
- Distribution of ventilation and perfusion and gas exchange<sup>4</sup>.

A study by Meisner and P. Hugh Jones on asthma shows FEV<sub>1</sub> variable changes with severity of pulmonary function<sup>5</sup>.

The American College of Chest Physician recommended and rise in 15-25% in FVC, FEV<sub>1</sub> and FFF<sub>25-75</sub>. In at least 2-3 spirometric values are clinically significant<sup>6</sup>, which is comparable to this study.

FEV <sub>1</sub>	FVC
↑25%	↑33% in LevoSalbutamol
↑22%	↑32% in Salbutamol

Another study from A Jantikar showed similar bronchodilator response between LevoSalbutamol and Salbutamol<sup>7</sup>.

In this series study of pulmonary function before and after inhalation of LevoSalbutamol and Salbutamol.

FVC	33%	32%
FEV <sub>1</sub>	25%	22%
FFF <sub>nmax</sub>	20%	24%
FEV <sub>1</sub> / FVC	11%	12%
FFF <sub>25-75</sub>	26%	24%

In LevoSalbutamol Salbutamol

Conclusively this study shows both LevoSalbutamol and Salbutamol are effective bronchodilators in asthma patient. Both levoSalbutamol and Salbutamol resulted in statistical improvement in Pulmonary Function given by MDI.

**Conclusion:**

Overall improvement in lung function was similar in Lev-oSalbutamol and Salbutamol. The American College of Chest Physician recommends an increase in 15-25% in FVC, FEV<sub>1</sub> and FFF<sub>25-75</sub>.

In at least 2 - 3 spirometric values clinically significant. This is comparable to this study.

**References:**

- 1] Environmental influence on the induction and incidence of asthma workshop [http.www.Epa.gov/nheer/asthma](http://www.Epa.gov/nheer/asthma) workshop.
- 2] New drugs for asthma allergy and COPD editors Trevor T. Hansel Peter J. Barnes vol.3
- 3] Robins Pathologic basis of diseases 6th edition page, 2000.
- 4] Crofton and Daglas respiratory disease fifth edition page, 24.
- 5] Pulmonary function in bronchial asthma Peter Meisner and P. Hugh Jones, Brit Med. J. 1968 1470-475.
- 6] Pulmonary function tests in health and disease P.S. Shankar 2nd edition, 2003.
- 7] A Jantikar B. Brashier M Magnji A Raghepaty Respiratory 2007, Elsevier.