# Introduction

Pulmonary arterial hypertension is defined as a group of diseases characterized by progressive increased in pulmonary vascular resistance, leading to right ventricular failure and premature death.(***Simonneau et al., 2004***)

Pathophysiology occurring in patient with parenchymal lung and cardiac disease that lead to pulmonary hypertension is not fully understood. Potential mechanisms include vasoconstriction either as a consequence of hypoxia in the pulmonary circulation or endothelial dysfunction, smooth muscle proliferation and vascular remodeling, destruction of alveolar capillary units by underlying and chronic left atrial hypertension in some patients with left heart failure or valvular heart diseases.(***Paulus et al***., ***1994)(Presberg et al., 2003***).

Traditionally patients with parenchymal lung and valvular heart diseases receive treatment which primary focuses on the lung parenchymal or cardiac pathology. Although theres is appreciation of importance of pulmonary circulation in these disorders it is only recently that renewed interest in the cardiopulmonary haemodynamics has led to the development of specific therapeutic intervention at this site(***Naeijie et al.,2005***).

Recently, therapies which improved right ventricular performance by favourably modulating pulmonary vascular resistance are receiving increasing attention in the management of patient with parenchymal lung and valvular heart disease who have co-existent pulmonary hypertension(***Madden et al.,2006***).One such treatment is Sildenafil , a selective phosphodiesterase 5 (PDE 5) inhibitor. Phosphodiesterases

inactivate cyclic guanosine mono phosphate(c GMP) the second messenger of prostacycline and nitric oxide(NO). The majority of PDE 5 pathway reside in the lungs and the urological tract. Slidenafil potentiates the effects of pulmonary c GMP and enhances the vasodilatory effect of this pathway. Such vasodilatory effects can be observed within 15 minutes of administration, can produce early beneficial effects at 6 weeks and such effects may persist for 6 months(***Ghofrani et al., 2002,Sheth et al., 2005***). I n addition Sildenafil has an early positive impact on left ventricular performance (***Sheth et al., 2005).***

To date attention has focus on early benefit of Slidenafil in selected patients with pulmonary hypertension associated with chronic obstructive pulmonary disease(COPD),interestial pulmonary fibrosis ( IPF), valvular heart disease(***Madden et al., 2004***).