

Evaluation of Prognostic Factor and Treatment Efficacy of Inhaled Iloprost in Group 3 Pulmonary Hypertension

Po-Lan Su, Chih-Hsin Hsu

National Cheng Kung University Hospital, Taiwan



Introduction

- According to current guideline, the treatment of group 3 pulmonary hypertension was limited to treating underlying disease
- Theoretically, Inhaled iloprost could decrease shunt flow and improve gas exchange by selective vasodilatation of pulmonary vascular bed
- To examine treatment efficacy by real world data

Method

- Retrospective study in National Cheng Kung University Hospital, Taiwan
- Patient population
 - Medical records of patients with group 3 pulmonary hypertension in past 10 years were reviewed
 - The computed tomography of chest was reviewed to confirm the diagnosis of emphysema, idiopathic pulmonary fibrosis (IPF) and combined pulmonary fibrosis and emphysema (CPFE).

Method

- Data record
 - Baseline characteristics
 - age, gender, pulmonary function test
 - exercise parameter from 6-minute-walk-test
 - hemodynamic parameters from echocardiography or right heart catheterization
 - Acute exacerbation event
 - in patients with emphysema secondary to chronic obstructive pulmonary disease (COPD) or CPFE.

Result

- Total 13 patients with group 3 pulmonary hypertension were reviewed
 - 3 patients with pulmonary fibrosis
 - 7 patients with emphysema
 - 3 patients with CPFE
- 6 patients was male and 3 patients receive treatment with inhaled iloprost

Table 1. Baseline characteristics among three groups

Patient No.	Age	Gender	Diagnosis	PASP (mmHg)	Iloprost use
1	48	male	IPF	60	+
2	70	female	IPF	70	
3	59	male	IPF	58	
4	70	male	Emphysema	65	
5	70	female	Emphysema	82	
6	56	female	Emphysema	65	
7	82	female	Emphysema	128	
8	73	female	Emphysema	32	
9	72	female	Emphysema	42	
10	86	female	Emphysema	50	
11	50	male	CPFE	70	+
12	92	male	CPFE	120	
13	71	male	CPFE	81	

PASP, pulmonary artery systolic pressure

Table 2. Baseline pulmonary function test profile among three groups

	FVC (%)	FEV1 (%)	FEV1/FVC	TLC(%)	DLco/VA (%)	PASP (mmHg)
Fibrosis	47.0	46.3	80.7	68.5	59.5	62.7
Emphysema	57.1	46	57.7	102	93.3	66.3
CPFE	98.7	90	66.7	83.7	37.0	90.3

FVC, forced vital capacity
FEV1, forced expiratory volume at first second
TLC, total lung capacity

DLco, diffusion capacity of carbon monoxide
VA, alveolar volume

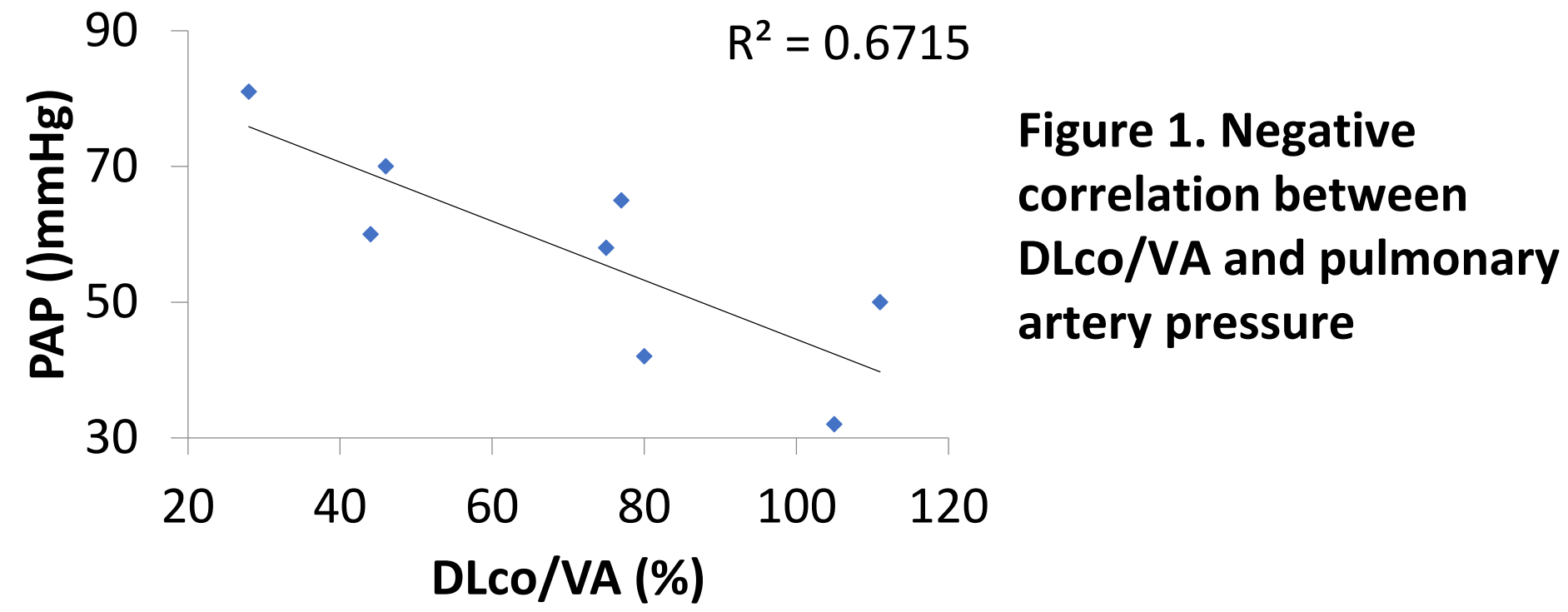


Table 3. Characteristics of patients with iloprost use and conventional

therapy	Iloprost user (n=3)	Conventional (n=10)	P value
Age	63.3	70.9	
Gender (male/female)	3/0	3/7	
Baseline PASP	83.3	69.7	
PASP change post 1 year	-24.33	0.45	<0.001
6MWT (m)	394.0	296.8	0.01

6MWT, six minute walk test

The pulmonary arterial pressure in patients receiving inhaled iloprost could pulmonary arterial pressure decreased significantly

Table 4. Characteristics of patients with emphysema secondary to COPD or CPFE who suffered from acute exacerbation or not

	Frequent AE (n=3)	Stable (n=4)	P value
Age	71.0	71.0	
Gender (male/female)	3/0	0/4	
Baseline PASP	90.3	59.8	0.03

COPD, chronic obstructive pulmonary disease

Patients with higher frequency of acute exacerbation have higher pulmonary arterial pressure

Summary

- With inhaled iloprost use, patients have significant improvement in severity of pulmonary hypertension and decreased risk for acute exacerbation of COPD.
- Based on current study, inhaled iloprost could be potential therapy for patients with group 3 pulmonary hypertension.