Fig1

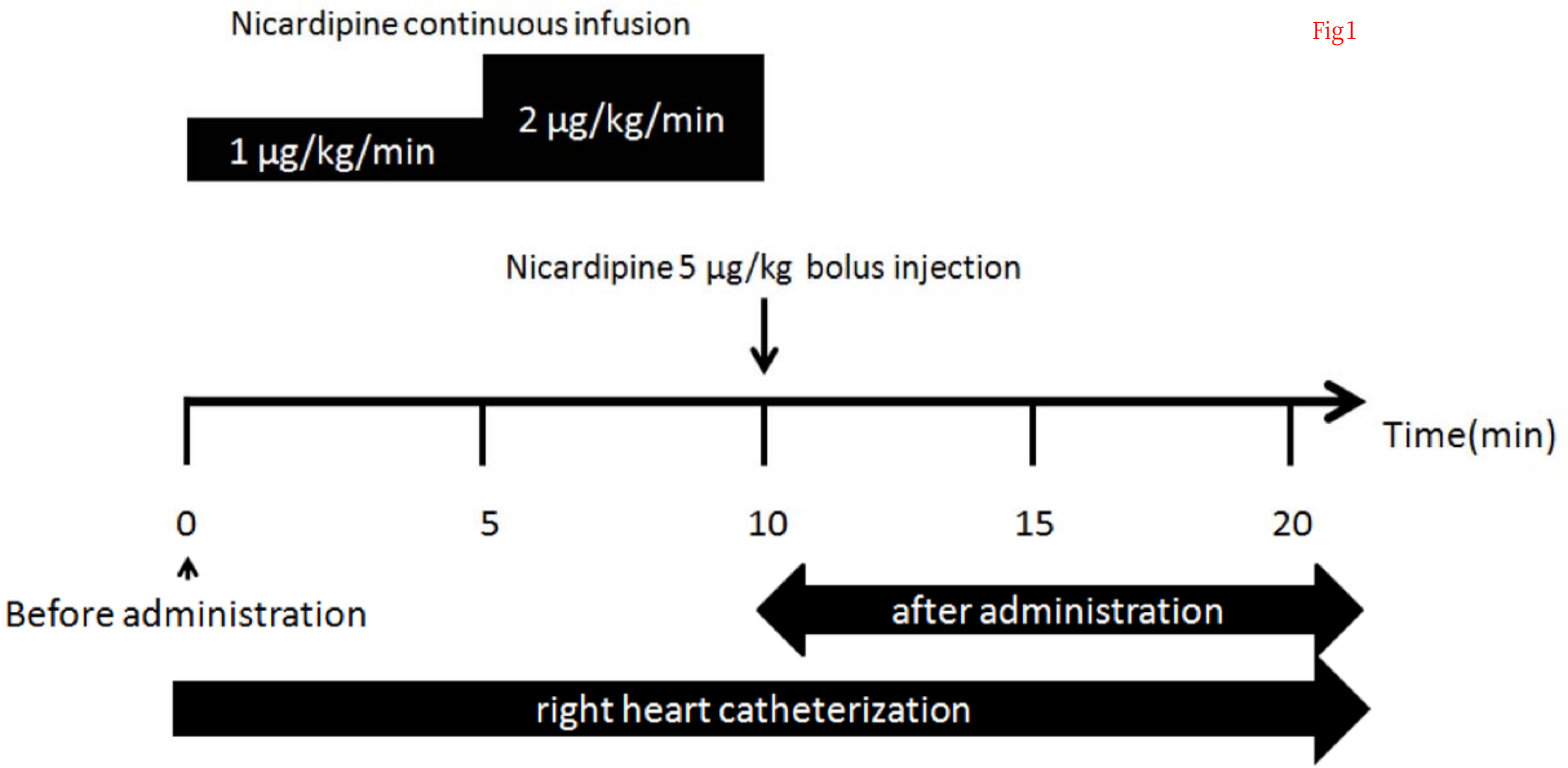
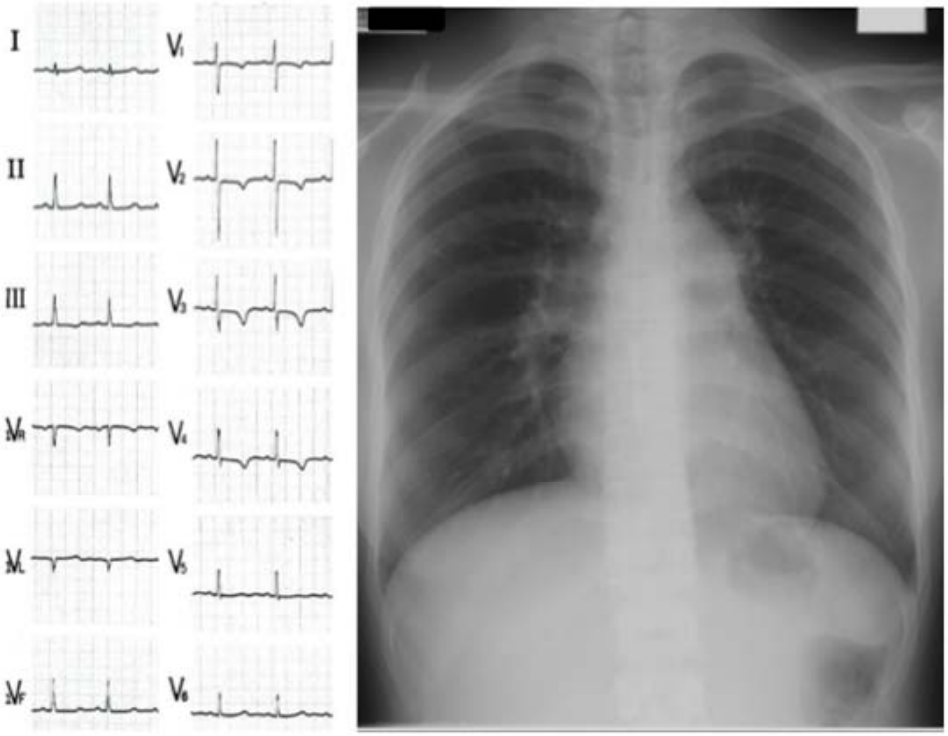

Nicardipine continuous infusion
1 μg/kg/min
2 μg/kg/min
Nicardipine 5 μg/kg bolus injection
Time(min)
0
5
10
15
20
Before administration
after administration
right heart catheterization

Fig2

(A)


I
II
III
aVR
aVL
aVF
V1
V2
V3
V4
V5
V6



(B)

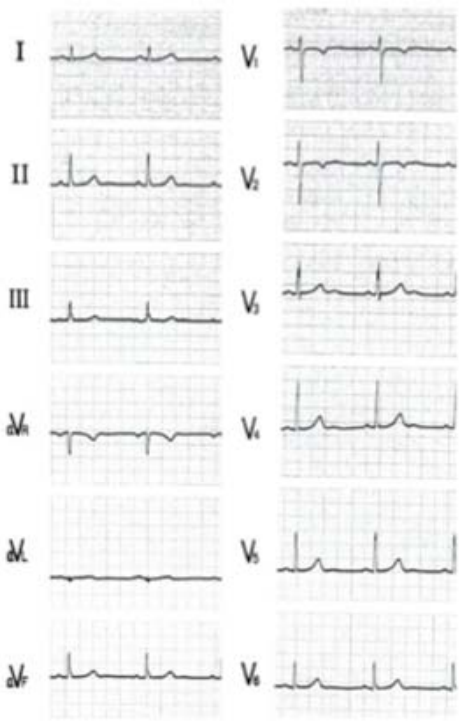

I
II
III
aVR
aVL
aVF
V1
V2
V3
V4
V5
V6

Fig3

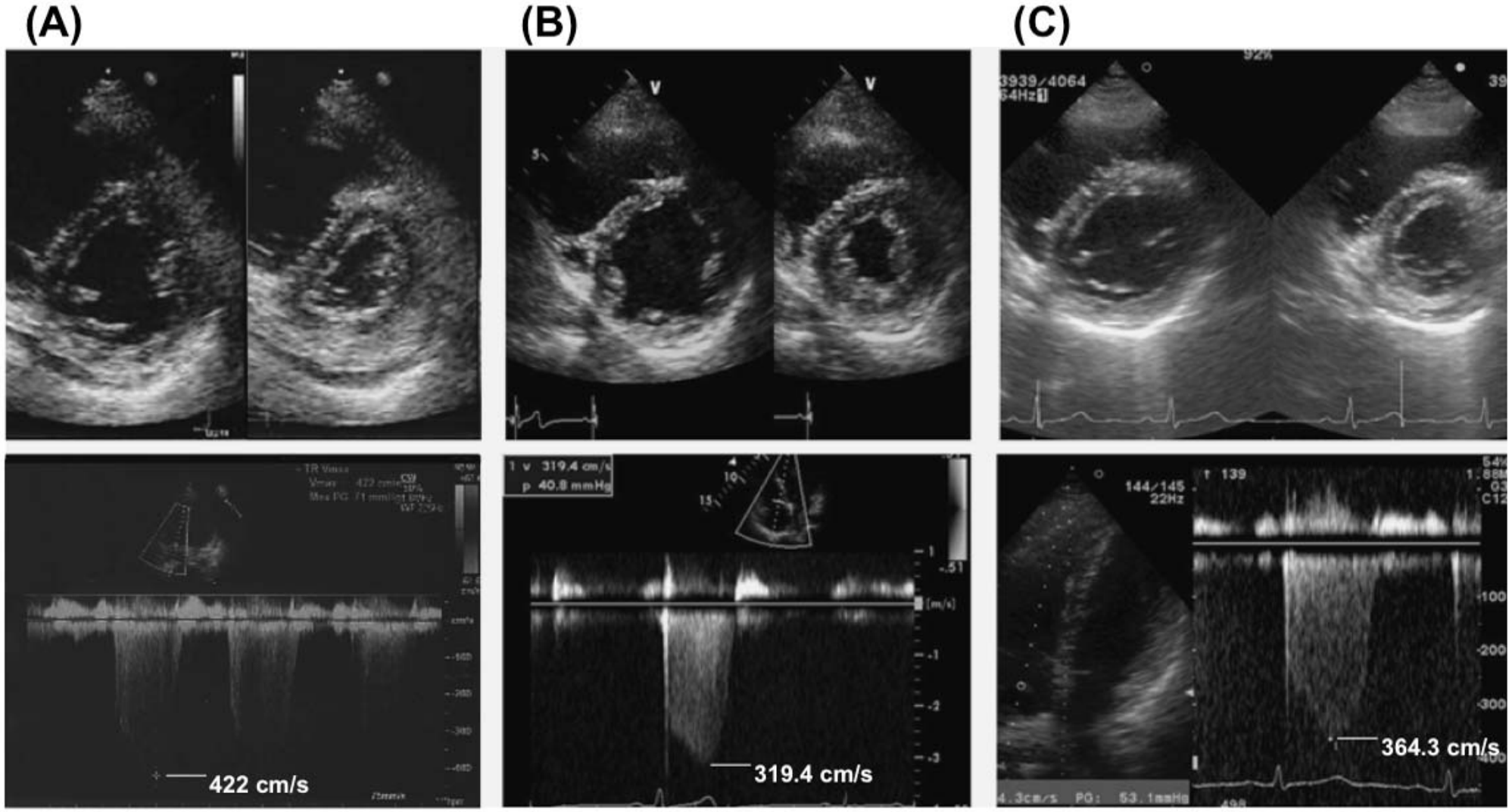


**Table 1. Baseline Characteristics**

| Variable | All (n=65) |
|---|---|
| **Sex-no. (%)** | |
| **Female** | **43(66.2)** |
| **Male** | **22(33.8)** |
| **Age (years)** | **37±17** |
| **Disease Duration (month)** | **48±73** |
| **Cause of PAH -no. (%)** | |
| **Idiopathic** | **45(69.2)** |
| **Congenital heart disease** | **9(13.8)** **ASD;8, VSD;1** |
| **Connective tissue disease** | **5(7.7)** **SLE;3, SSc;1, MCTD;1** |
| **Others** | **6(9.2)** |
| **Medications -no. (%)** | |
| **CCB** | **8(12.3)** |
| **Oral drug other than CCB** | **33(50.8)** |
| **Epoprostenol** | **8(12.3)** |
| **Clinical characteristics** | |
| **Height (cm)** | **161±9.0** |
| **Weight (kg)** | **56±13** |
| **Body mass index (kg/m$^2$)** | **22±4.4** |
| **WHO functional class** | **2.4±0.6** |
| **BNP (pg/mL)** | **130±177** |
| **Hemodynamics** | |
| **Heart rate (/min)** | **78±15** |
| **BP (s/d/m) (mmHg)** | **113±17/62±12/79±13** |
| **PAP (s/d/m) (mmHg)** | **84±26/36±15/54±18** |
| **Right atrial pressure (mmHg)** | **3.9±3.6** |
| **CO (L/min)/CI(L/min/m$^2$)** | **4.0±1.7/2.5±0.9** |
| **TPR (dyne·sec·cm$^{-5}$)** | **1223±648** |

PAH = pulmonary arterial hypertension; CCB = calcium channel blocker; s/d/m = systolic/diastolic/mean; BNP = plasma concentration of brain natriuretic

peptide; CO = cardiac output; CI = cardiac index, TPR = total pulmonary resistance; ASD = atrial septal defect, VSD = ventricular septal defect; SLE = systemic lupus erythematosus, SSc = systemic scleroderma, MCTD = mixed connective tissue disease

**Table 2. Hemodynamics during Nicardipine-challenging Test**

| | Pre | Post |
|---|---|---|
| **Non-responder** | | |
| **sBP (mmHg)** | **113±17** | **106±16** |
| **mPAP (mmHg)** | **54±18** | **54±19** |
| **CO (L/min)** | **4.0±1.7** | **4.5±1.8** |
| **TPR (dynes·sec·cm$^{-5}$)** | **1236±646** | **1090±527** |
| **Responder 1** | | |
| **sBP (mmHg)** | **105** | **99** |
| **sRVP (mmHg)** | **69** | **41** |
| **CO (L/min)** | **2.0*** | **3.0*** |
| **TPR (dynes·sec·cm$^{-5}$)** | **-** | **-** |
| **Responder 2** | | |
| **sBP (mmHg)** | **117** | **92** |
| **mPAP (mmHg)** | **37** | **27** |
| **CO (L/min)** | **6.1** | **7.3** |
| **TPR (dynes·sec·cm$^{-5}$)** | **483** | **297** |

*$S_{RA}O_2$ was substituted for $S_{PA}O_2$, and cardiac output was calculated by the Fick oxygen method.

sBP = systolic blood pressure; mPAP = mean pulmonary artery pressure; sRVP = systolic right ventricular pressure; CO = cardiac output; TPR = total pulmonary resistance