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# A Case of Severe Acute Respiratory Distress Syndrome Treated with Extracorporeal Life Support

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The incidence of acute respiratory distress syndrome (ARDS) has been estimated worldwide to range from 1.7 to 75 cases per 100,000. There are many treatments for ARDS, but only the low tidal volume strategy is based on strong clinical evidence from randomized clinical trials. The efficacy of extracorporeal life support (ECLS) in adults remains controversial. Ongoing clinical trials and research have shown a benefit for its use to salvage severe ARDS patients that are in failure with conventional treatment. We encountered a 41-year-old woman who developed ARDS induced by pneumococcal pneumonia. Despite conventional mechanical ventilation in the emergency room, severe hypoxia remained. We treated the patient immediately with ECLS. The patient has almost fully recovered, and was discharged from a 177-day stay at our hospital. (*Tuberc Respir Dis 2007;63:526-530*)

**Key Words:** Acute respiratory distress syndrome, Extracorporeal life support

## 서 론

75

100,000 1.5

2006  
CESAR

가 가  
128  
가 2007

1. 5.6

41

1

1,2

## 증 례

(extracorporeal life support)

3,4

환 자: ○○, 41

주 소:

현병력: , 가

1

가족력:

과거력: 4 1

신체검사 소견:

160/80 mmHg,

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142/ , 60/ , 38.3°C,  
32% .

검사실 소견: 가 pH 7.31, PaCO<sub>2</sub> 36 mmHg, PaO<sub>2</sub> 19 mmHg, bicarbonate 18.1 mmol/L, 24% 6,670/mm<sup>3</sup> ( 89.4%), AST 72 IU/L, LDH 940 IU/L 5.7 g/dl, 2.9 g/dl INR 1.30 2+

방사선 소견: X- 가 (Figure 1A).

치료 및 경과: 가 가 24% PEEP 16 cmH<sub>2</sub>O, FiO<sub>2</sub> 1.0 pH 7.29, PaCO<sub>2</sub> 42 mmHg, PaO<sub>2</sub> 61% A-aDO<sub>2</sub> 628 mmHg, PaO<sub>2</sub>/FiO<sub>2</sub> 36 mmHg 가 3 (Figure 2). FiO<sub>2</sub> 1.0 가 pH 7.26, PaCO<sub>2</sub> 23 mmHg, PaO<sub>2</sub> 115 mmHg, 97% 13

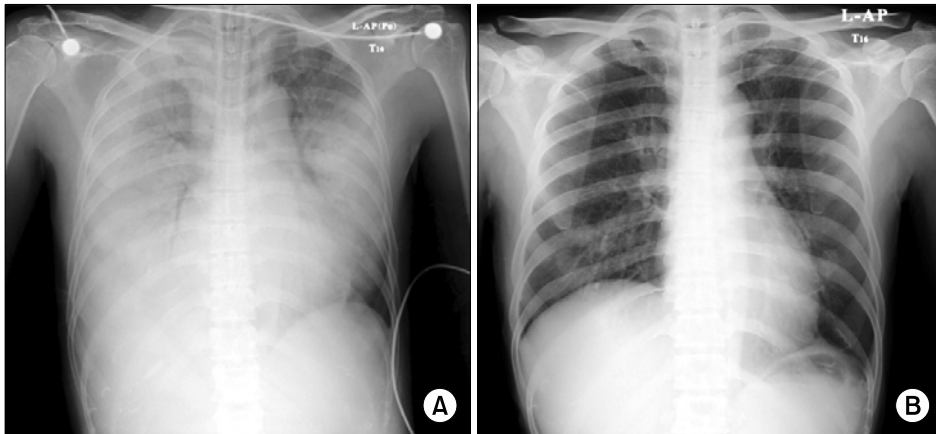


Figure 1. Chest PA at (A) admission and (B) discharge.

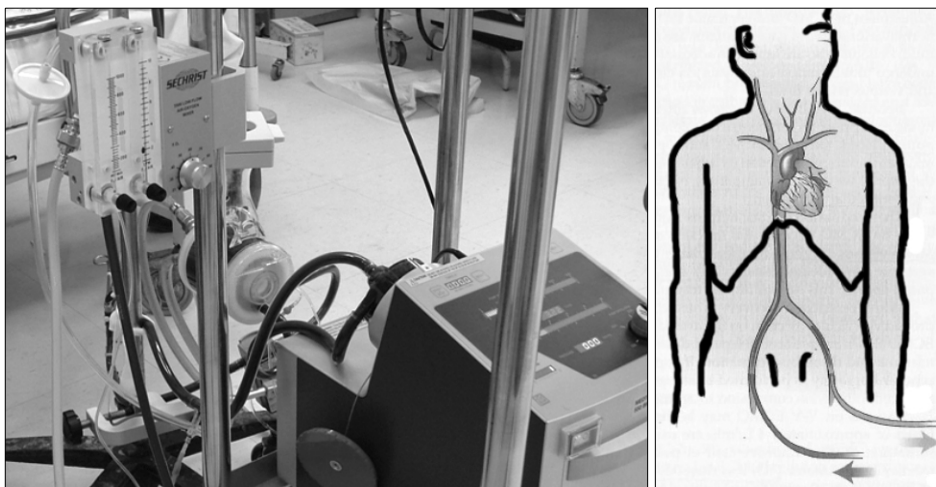


Figure 2. Veno-venous extracorporeal membrane oxygenation.

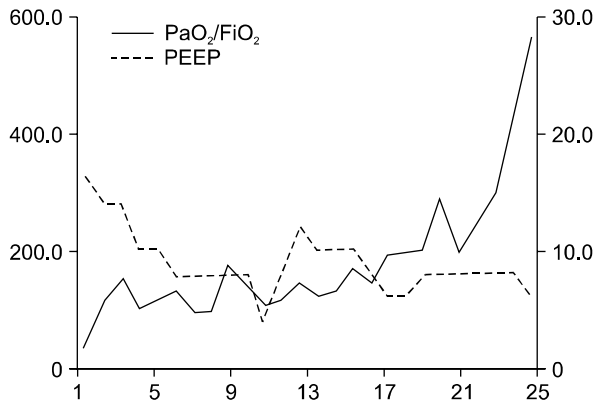


Figure 3. Change of PaO<sub>2</sub>/FiO<sub>2</sub> and PEEP (positive end-expiratory pressure).

FiO<sub>2</sub> 0.6, PEEP 8 cmH<sub>2</sub>O, pH 7.43, PaCO<sub>2</sub> 41 mmHg, PaO<sub>2</sub> 87 mmHg, 가 97% . 20, 25 PaO<sub>2</sub>/FiO<sub>2</sub>가 200 mmHg, 300 mmHg (Figure 3). *Streptococcus pneumoniae*가

(SVRI) 1,756 dynes · sec · m<sup>2</sup>/cm<sup>5</sup> (1,970~2,390) 가 3 . 2

107 가 . 7

2 mg 2 mg 4 1 mg 2 가 177 가 3 2 (Figure 1B).

고 찰

1) PaO<sub>2</sub>/FiO<sub>2</sub> 300 mmHg 2) 3) X- 4) 18 mmHg

가 가 , 4가 PaO<sub>2</sub>/FiO<sub>2</sub>가 200 mmHg 7. 1997 71.9% 가 8. 가 가 1. (prostaglandin), ketoconazole, nitric oxide, lisofylline 가 7

가 가 2 가 가 가 가 9.

가 가 1,2 (open lung)

10 ARDS net-work 11.

가 , 12 1979 , 1994 2 3,4

. 1979 90 가 90% 1994 40 ( vs. ) (p=0.8) 67%, 58%

1994 가 24% 48%

Table 1. The indications for extracorporeal life support

Michigan medical center PaO <sub>2</sub> /FiO <sub>2</sub> < 100 mmHg or A-aDO <sub>2</sub> > 600 mmHg or transpulmonary shunt fraction > 30% Age < 70 years Time on mechanical ventilation < 10 days	41
CESAR trial inclusion criteria Age (18~65 years) Murray score ≥ 3.0 or uncompensated hypercapnea with a pH ≤ 7.20 Time on mechanical ventilation ≤ 7 days	3

요 약

참 고 문 헌

13 .

2006 가 CESAR Table

Michigan 가

가 가 . CESAR 20 cmH<sub>2</sub>O, 10 cmH<sub>2</sub>O, 14

10 / , FiO<sub>2</sub> 0.3 > 100,000/ml (dry weight) 6 .

9~10 g/dl

가 . CESAR 30

X- cmH<sub>2</sub>O , FiO<sub>2</sub>가 0.6 6 Hemmila 5

0.5 FiO<sub>2</sub> 가 가 13

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