

Appendix 1

Questionnaire Survey on Management of Septic Shock in Children in China

Dear doctors, thank you for your attention and participation in questionnaire survey project about “management of septic shock in children in China”. We hereby invite you to take time to complete the following questionnaire. Please fill in according to the actual situation of you and your unit. Thank you for your support.

Information of Physician	
Age (single choice): <input type="checkbox"/> 20-30 <input type="checkbox"/> 30-40 <input type="checkbox"/> 40-50 <input type="checkbox"/> 50-60	
Gender (single choice): <input type="checkbox"/> Male <input type="checkbox"/> Female	
Professional title (single choice): <input type="checkbox"/> Junior <input type="checkbox"/> Intermediate <input type="checkbox"/> Senior	
Academic qualification (single choice): <input type="checkbox"/> Associate <input type="checkbox"/> Bachelor <input type="checkbox"/> Master <input type="checkbox"/> PhD	
Information of Hospital	
The full name of hospital: _____	
Hospital rank (single choice): <input type="checkbox"/> Tertiary <input type="checkbox"/> Secondary	
ICU specialist training centers (single choice): <input type="checkbox"/> Yes <input type="checkbox"/> No	
Information of ICU	
Authorized bed number: _____	
Type of ward (single choice): <input type="checkbox"/> General pediatric ICU <input type="checkbox"/> Mixed (pediatric and adult) <input type="checkbox"/> Mixed (pediatric and neonate) <input type="checkbox"/> PCICU/PSICU <input type="checkbox"/> It has rescue space, but no independent ICU system	
Physician (Number): Junior: _____ Intermediate: _____ Senior: _____	
Number of patients with septic shock per year (single choice): <input type="checkbox"/> 1-10 <input type="checkbox"/> 10-30 <input type="checkbox"/> 30-50 <input type="checkbox"/> 50-100 <input type="checkbox"/> more than 100	
Background on Management the Patients with Septic Shock	
Q1. Do you know the 2015 consensus on the diagnosis and treatment of sepsis in children in China? (single choice)	<input type="checkbox"/> I don't know <input type="checkbox"/> I know <input type="checkbox"/> I am very familiar with
Q2. Have you attended PALS training? (single choice)	<input type="checkbox"/> Did not attend <input type="checkbox"/> To participate in: The year? _____
Investigation on Management of Septic Shock in Your Hospital	
Q3. When treating a septic shock patient, which of the following tests should you perform in the first hour? (multi-choice) <input type="checkbox"/> Blood analysis <input type="checkbox"/> Blood glucose <input type="checkbox"/> PCT <input type="checkbox"/> Blood lactic acid level <input type="checkbox"/> Arterial blood gas analysis <input type="checkbox"/> Central venous blood gas analysis <input type="checkbox"/> Blood culture <input type="checkbox"/> Liver and kidney function analysis <input type="checkbox"/> DIC <input type="checkbox"/> Other: _____	
Q4. In your department, the common symptoms of septic shock patients are (multi-choice): <input type="checkbox"/> Fever <input type="checkbox"/> Diarrhea <input type="checkbox"/> Cough <input type="checkbox"/> Skin bleeding <input type="checkbox"/> Shortness of breath <input type="checkbox"/> Vomiting <input type="checkbox"/> Depression <input type="checkbox"/> Rash <input type="checkbox"/> Cyanosis <input type="checkbox"/> Other: _____	
Q5. When treating patients with septic shock, the signs you usually pay attention to are (multi-choice): <input type="checkbox"/> Consciousness <input type="checkbox"/> Heart sound and rhythm of the heart <input type="checkbox"/> Heart rate <input type="checkbox"/> Central and peripheral pulsation <input type="checkbox"/> Lung signs <input type="checkbox"/> Toenails and skin color <input type="checkbox"/> Peripheral and body temperature <input type="checkbox"/> Capillary filling time <input type="checkbox"/> Respiratory rate <input type="checkbox"/> Other: _____	
Q6. What are the common underlying diseases associated with septic shock in your department (multi-choice): <input type="checkbox"/> Long-term use of immunosuppressants for autoimmune diseases <input type="checkbox"/> Tumor <input type="checkbox"/> Organ transplantation <input type="checkbox"/> Congenital heart disease <input type="checkbox"/> Congenital immunodeficiency disease <input type="checkbox"/> Other: _____	

Q7. During the rescue phase of septic shock, monitoring you are sure to implement include: (multi-choice):

- Noninvasive blood pressure
- Arterial blood pressure
- Electrocardiograph
- Percutaneous oxygen saturation
- Central venous pressure
- Mixed venous oxygen saturation
- Urine output measurement
- Arterial blood gas analysis
- Central venous blood gas analysis
- Other: _____

Q8. Do you use invasive hemodynamic monitoring (transpulmonary thermodilution) for your patients with septic shock? When? (if you choose "no", please go directly to Q9) (multi-choice)

- All patients with septic shock were treated
- When there is no response to conventional treatment
- When the liquid is resuscitated
- When vasoactive drugs are needed
- Other: _____

Q9. Do you perform non-invasive hemodynamic monitoring in your patients with septic shock? What are the methods if you chose YES? (multi-choice)

- Ultrasound cardiac output monitor (USCOM)
- Bioreactance system (NICOM)
- Intensivists led bedside ultrasound technology
- Cardiac output monitor based on repeated inhalation of CO₂ (NICO)
- FloTrac/Vigileo system
- Other: _____

Q10. Common parameters for invasive/noninvasive hemodynamic monitoring by you: (multi-choice)

- CO/CI
- SV
- EF/FS
- TFC
- FTC
- SVR/SVRI
- SVV/PPV
- PVI
- EEO
- IVC width and variability
- Passive leg rising/ liquid challenge test
- BNP
- CVP
- RVEDV
- GEDV
- LVEDV
- PAWP E/e'
- Atrial/ventricular size/structure, valve regurgitation
- DO₂
- EVLWI
- VTI
- Other: _____

Q11. When did 24-hour urine volume monitoring begin for your patients with septic shock? (single choice)

- Within 1 hour after shock
- Within 3 hour after shock
- Within 6 hour after shock
- Other: _____

Q12. Which microcirculation monitoring can you use for your septic shock patients? (multi-choice)

- Blood lactic acid level
- Capillary filling time
- Urine output measurement
- ScvO₂
- Pcv-aCO₂
- SDF/IDF (Microcirculation microscopic)
- PtcO₂/PtcCO₂
- NIRS (Near infrared method)
- Other: _____

Q13. Difficult access to veins, what measures do you usually take to solve the problem? (single choice)

- The more competent nurse continued her efforts to open the peripheral vein
- Try other deep veins
- Open the vein bedside surgically
- Intraosseous access
- Other: _____

Q14. In your unit, septic shock fluid resuscitation may include optional medications (multi-choice):

- Saline/ringer's solution
- 5% Albumin
- Artificial colloid
- Plasma
- Concentrated red blood cells
- Whole blood
- Other: _____

Q15. When you treat the patients with septic shock, the time of initial antibiotic application (single choice)

- If antibiotics are used within 6 hours before diagnosis, they may not be used in the rescue phase
- Within 1 hour after diagnosis of septic shock
- Within 3 hour after diagnosis of septic shock
- Within 6 hour after diagnosis of septic shock
- Within 12 hour after diagnosis of septic shock
- Within 24 hour after diagnosis of septic shock

Q16. Other management that you may give to a patient with septic shock include (multi-choice):

- Debridement surgery Chest/abdominal drainage or puncture Vasoactive drugs
 Oxygen supply (oxygen/mechanical ventilation) Gamma globulin Glucocorticoid
 CRRT ECMO Other: _____

Q17. Female, 6 years old, 20 kg, Systemic lupus erythematosus, 1 year

- T38.5 °C; ABP 85/30 mmHg; CVP10 mmHg; ScvO₂75%; Pcv-aCO₂ 5 mmHg;
- ABG: pH7.35, PCO₂ 35, PO₂ 90, BE1.2, Lac1mmol/L
- Warm extremities; Urine output in the last 3 hours: 10 mL/h

What would you do in this clinical case vignette? (single choice)

- Normal saline 400 ml (within 5-20 minutes) 5% Albumin 250 ml (within 5-20 minutes)
 Norepinephrine 0.1 ug/kg/min Dobutamine 5 ug/kg/min

Q18. Female, 3 years old, 15 kg, diagnosed with “acute leukemia” before 6 months.

Relief therapy, pulmonary infection. Antibiotic therapies with meropenem, vancomycin, voriconazole and sulfanilamide have been given.

MV: (BIPAP) PIP 23cmH₂O, PEEP 8 cmH₂O, FiO₂ 0.6, f 30

During the treatment, the fever returned, and the ventilator parameters were as above

- HR158; T38.5°C; SpO₂ 97%; ABP:75/30 mmHg; CVP7mmHg; ScvO₂ 52%
- ABG: pH7.37, PCO₂ 35, PO₂90, Lac4.6 mmol/L
- Urine output in the last 3 hours: 10 mL/h

What would you do in this clinical case vignette? (multi-choice)

- The width of the inferior vena cava was 0.6 cm, the right ventricle was not dilated, and the respiratory variation of the inferior vena cava was 18%
 NICOM: PPV positivity
 PiCCO: SVV15%, PPV18%, SVI 22 mL/m², CI3.32L/min/m²
 Normal saline 300ml (within 5-20 minutes)
 Concentrated red blood cells 2U
 Other: _____

Q19. Female, 11 months old, 10kg, 5 months after VSD repair, 2 days of fever

T38.9 °C, HR168, RR40, SPO₂: 98% (non-reinhalation mask)

Exam: Irritability, decreased consciousness, normal heart sound, short breath, rales in bilateral lung, cold extremities

Monitoring: According to the monitoring data before treatment (see table below), NS 200 mL (10 min bolus) and norepinephrine 0.2 µg/kg/min were given respectively.

The monitoring data after 1 hour are as follows:

Before treatment	1 hour after treatment
•ABP 75/30 mmHg	80/34 mmHg
•HR 168	160
•CVP10 mmHg	14 mmHg
•ScvO ₂ 52%	54%
•Lac3.5 mmol/L	3.2 mmol/L
	•PPV8%, SVV7%
	•CI 3.3L/min/m ²
	•SVRI 1238 dyn.s.cm-2.m2
	•Hb 10.5 g/dl
	•ABG: pH7.37, PCO ₂ 34, PO ₂ 98
•Urine output: 5 mL	10 mL

What would you do in this clinical case vignette? (single choice)

- Normal saline 200 ml (within 5-20 minutes)
 Concentrated red blood cells 1U
 Norepinephrine 0.4 ug/kg/min
 Dobutamine 5 µg/kg/min
 Other: _____

