

Supplementary material 1

Case Report Form

PAPNSG Multi-Center Study

Enrollment number: _____

Enrollment center:

- ☐ Maternal and Child Health Hospital of Shangri-La
- ☐ Diqing Tibetan Autonomous Prefecture People's Hospital
- ☐ Nujiang Lisu Autonomous Prefecture People's Hospital
- ☐ Reproductive Medicine Research Center, Affiliated Hospital of
Yunnan University

Please read the following instructions carefully before completing the form.

Instructions for completing the case report form

1. Screening qualified patients to complete the case report form.
2. Case report form must be filled out accurately, clearly, not arbitrarily altered, the error is corrected with a horizontal line drawn in the center, for example: 99.6, and then fill in the correct figures and text next to it, and sign the name of the modification of the initials and the time of modification (do not use an eraser, correction fluid to cover up or draw many lines).
3. Fill out the record always with a water-based pen or carbon signature pen.
4. For all items with “□” in the table, please mark “O” on the conforming entries. All columns in the table should be filled in with the corresponding words or figures, and should not be left blank.
5. All items are not checked, omitted or cannot be completed by the organization for any reason, please fill in “NK (unknown)”; if the item is not needed or not appropriate, fill in “NA (not applicable)”.
6. If an adverse event occurs, record the time of occurrence, severity and duration of the adverse event, measures taken and regression. Please report to the person in charge of the clinical study at the research unit in time.

NISA Multi-Center Study ---- Clinical Trial Flowchart

Program	Screening Period		Time After Birth				
			10mins	1hour	12hours	24hours	72hours
	Preterm infants	Day of admission					
Whether met inclusion criteria	√						
Signed informed consent	√						
Randomized grouping of reporting centers		√					
Demographic information		√					
Family information		√					
Mother's history		√					
Neonatal situation		√					
Admission Condition		√					
Blood gas analysis of umbilical artery			√				
eNOS			√				
Doppler ultrasound				√	√	√	√

Based on the history and physical examination, please confirm the following

Inclusion criteria	Yes	No
(1) Participating hospital-born term infants (gestational age 37+0 ~ 41+6weeks)		
(2) Neonatal vital signs were normal: heart rate 110~180 times / min, respiratory rate 30~60 times / min, body temperature 36.5~37.5°C, no other pathological conditions such as cyanosis, dyspnea and heart murmur		
(3) The mother lives at the current altitude and leaves the current altitude for the whole pregnancy less than 1 month		
(4) Written informed parental consent was obtained		
If the answer to any of the above is “No”, the subject cannot participate in the study.		

Exclusion criteria	Yes	No
(1) Need for additional oxygen supply or any form of assisted ventilation after birth		
(2) There was evidence of intrauterine distress, such as meconium contamination in amniotic fluid, and Apgar score less than 7 at 1 min / 5 min		
(3) Those who require hospitalization for any reason after birth		
(4) Children who have been confirmed to have anomalous pulmonary venous drainage, interruption/narrowing of the aortic arch, and right ventricular outflow tract obstruction		
(5) There is a major congenital malformation		
(6)Refuse or withdraw from the study		

1. General information

1.1 Patient name	
1.2 Hospitalization number	
1.3 Contact information (phone or WeChat)	

2、Basic information on mother

2.1 (1) Parents' age	Father ____years Mother ____years
(2) Mother's births	
(3) Adverse maternal history	Spontaneous Miscarriage ☐ Fetal Miscarriage ☐ Maternal Miscarriage ☐ Gravida ☐ Stillbirth pregnancy ☐ Stillbirth ☐ Prenatal Hemorrhage ☐ Other ☐
2.2 Mother's literacy level	Elementary school ☐ Junior high school ☐ High school ☐ University ☐ Master's degree and above ☐ Illiterate ☐
2.3 Mother's profession	Student ☐ Commercial ☐ Worker ☐ Manager ☐ Official ☐ Employee ☐ Professional ☐ Individual ☐ Military ☐ Unemployed ☐ Farmer ☐ Other
2.4 Mother's weight before the current pregnancy	kg
2.5 Mother's weight before the current delivery	kg
2.6 Mothers' pre-pregnancy underlying diseases	
2.7 Father's literacy level	Elementary school ☐ Junior high school ☐ High school ☐ University ☐ Master's degree and above ☐ Illiterate ☐
2.8 Father's profession	Student ☐ Commercial ☐ Worker ☐ Manager ☐ Official ☐ Employee ☐ Professional ☐ Individual ☐ Military ☐ Unemployed ☐ Farmer ☐ Other

3、Basic information

3.1 premature rupture of membranes	No ☐ Yes ☐ ____hr
3.2 Gestational diabetes	
3.3 Placenta praevia	No ☐ Yes ☐
(1) Placenta praevia with placental implantation	No ☐ Yes ☐
(2) Duration of prenatal hospitalization before birth of the newborn	No ☐ Yes ☐
3.4 Hypertensive disorders of pregnancy	No ☐ Yes ☐
(1) Highest blood pressure: systolic blood pressure	mmHg
(2) Diastolic blood pressure	mmHg
(3) Prenatal hospitalization of newborns	No ☐ Yes ☐
3.5 Test-tube baby	No ☐ Yes ☐
3.6 Mother's drug addiction	No ☐ Yes ☐
3.7 Smoking	No ☐ Yes ☐

3.8 Drinking	No ☐ Yes ☐
3.9 Oral folic acid during pregnancy	No ☐ Yes ☐
3.10 Prenatal examination	
(1) Regulation of prenatal examinations	No ☐ Yes ☐
(2) Maternity hospitals and grades	Level II hospitals ☐ Level III hospitals ☐
3.11 Other risk factors during pregnancy	
(1) Systemic lupus erythematosus in pregnancy	No ☐ Yes ☐
(2) Hypothyroidism in pregnancy	No ☐ Yes ☐
(3) Hyperthyroidism in pregnancy	No ☐ Yes ☐
(4) Mental illness in pregnancy	No ☐ Yes ☐
(5) Pregnancy combined with other diseases	No ☐ Yes ☐
3.12 Altitude of place of residence during pregnancy	meters
Whether the pregnancy has left the residence	month(s)

4. Information about the child

4.1 (1) Gestation week	_____ week _____ day
(2) Birth weight	g
(3) Whether twin/multiple fetuses	Yes ☐ , number of fetuses _____ No ☐
4.2 Date of birth	_____ year _____ month _____ day _____ hour _____ minute
4.3 Sex	man ☐ female ☐
4.4 Mode of delivery	Normal labor ☐ Cesarean section ☐ Forceps ☐ Breech delivery ☐
4.5 Apgar score: 1min-5min-10min	
4.6 Admission temperature (°C)	
4.7 Heart rate (beats per minute)	
4.8 Respiration (breaths/min)	
4.9 SpO2 (%)	
4.10 Weight (g)	
4.11 Height (cm)	
4.12 Head circumference (cm)	
4.13 Blood pressure (mmHg)	

5. Diagnosis

5.1 Primary Diagnosis:	
5.2 Secondary Diagnosis: (1)	①

(2)	②
(3)	③

6. Blood gas analysis of umbilical artery

pH:	
PCO ₂	mmHg
PCO ₂	mmHg
HCO ₃	mmol/L
BE	mmol/L
Lac	mmol/L
HB	g/L

7. Doppler ultrasound

	> 12hr	24-48hr	48-24hr
RV (Right Ventricular measurements)			
Right ventricular anterior wall thickness			
IVS (Interventricular septum thickness)			
LV (Left Ventricular measurements)			
PA (Pulmonary artery trunk)			
SV (Stroke volume)			
EF (Ejection fraction)			
Cardiac output per minute Degree of tricuspid regurgitation: trace, mild, moderate, severe			
Maximum velocity of tricuspid regurgitation (m/s)			
Maximum velocity of pulmonary valve regurgitation (m/s)			
Short - axis left ventricular shape: whether it is D - shaped			
Left ventricular eccentricity index during systole			
Pulmonary vascular resistance index			
Patent ductus arteriosus: Yes, No			
Peak shunt velocity of the ductus arteriosus			