

Supplementary table 1. Comparison of main outcomes between the survival group and death group

Outcomes	Survival group (n=54)	Death group (n=73)	$\chi^2/Z/Fisher$	P value
BPD [n(%)]*	46(85.19)	8(10.96)	69.971	<0.01
Severe BPD [n(%)]	15(27.78)	7(9.59)	7.170	<0.01
Pneumothorax [n(%)]	1(1.85)	5(6.85)	/	0.239
PPHN [n(%)]	1(1.85)	6(8.22)	/	0.237
NEC ($\geq$ stage II) [n(%)]	8(14.81)	11(15.07)	0.002	0.968
ROP [n(%)]	25(46.30)	1(1.37)	38.480	<0.01
IVH ($\geq$ grade III) [n(%)]	11(20.37)	30(41.10)	6.099	0.014
Length of hospital stay (Median+quartile, days)	63.00(54.00, 85.00)	3.00(2.00, 8.00)	-9.275	<0.01

*The proportion of BPD refers to BPD infants/ infants who survived till 28 days after birth. Abbreviation: BPD: bronchopulmonary dysplasia; PPHN: persistent pulmonary hypertension in newborns; NEC: necrotizing enterocolitis; ROP: retinopathy of prematurity; IVH: intraventricular hemorrhage.

Supplementary table 2. Variable screened by Lasso regression

Variables	coefficient
Sex	/
GA	-0.072693263
Onset time	-0.010064471
Birth weight	/
1min Apgar	-0.017329741
5min Apgar	-0.015742427
Prenatal glucocorticoid	/
PS before pulmonary hemorrhage	/
PS after pulmonary hemorrhage	/
Resuscitation by intubation	0.132680703
PLT after pulmonary hemorrhage	/
PT after pulmonary hemorrhage	0.015201081
APTT after pulmonary hemorrhage	/
HsPDA	/
Early onset sepsis	0.231213948
Grade III-IV RDS	0.005011181
Temperature at birth	/

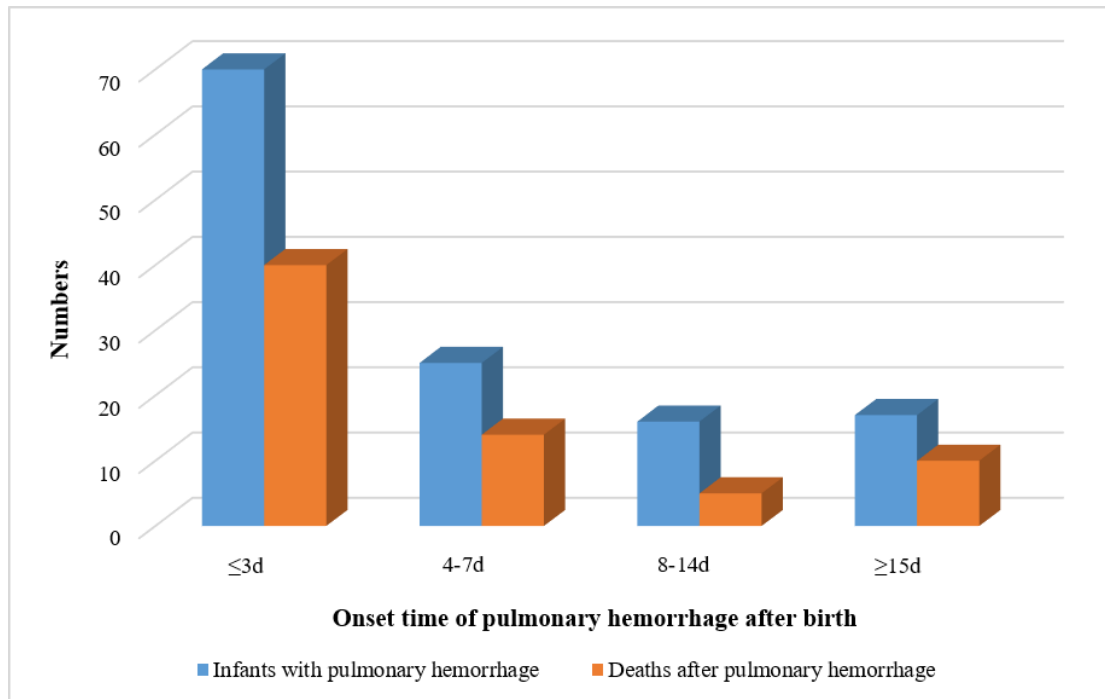
* Abbreviation: GA: gestational age; PS: pulmonary surfactant; PLT: platelet; PT: prothrombin time; APTT: activated partial thromboplastin time; HsPDA: hemodynamic significant patent ductus arteriosus; RDS: respiratory distress syndrome.

Supplementary table 3. Threshold effect analysis of onset time on mortality in VLBWIs

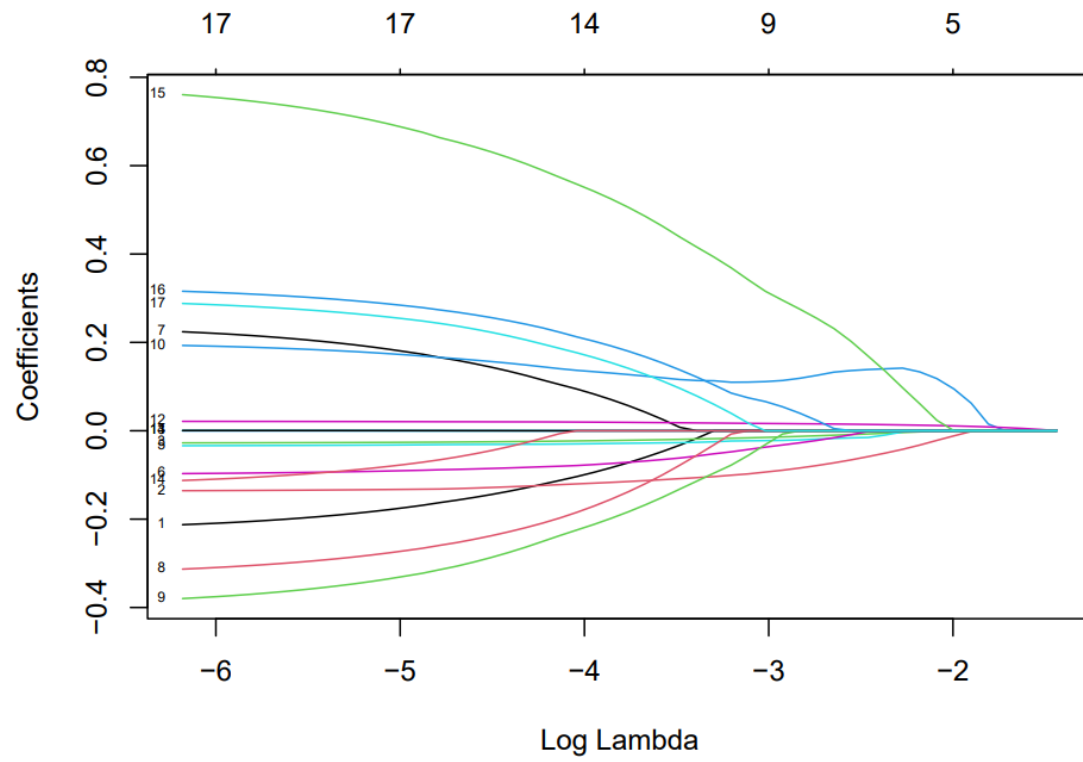
	Adjusted HR (95% CI), <i>P</i> -value*
Fitting model by standard linear regression	0.96(0.925-0.997), 0.032
Fitting model by two-piecewise linear regression	
Inflection point	3 days
<3 days	0.435(0.327-0.58), 0
>3 days	1.007(0.977-1.037), 0.663
P for likelihood ratio test	<0.001

*Adjusted by GA, 1min Apgar, 5min Apgar, resuscitation by intubation, PT, sepsis, and grade III-IVRDS. Abbreviation: HR: hazard ratio.

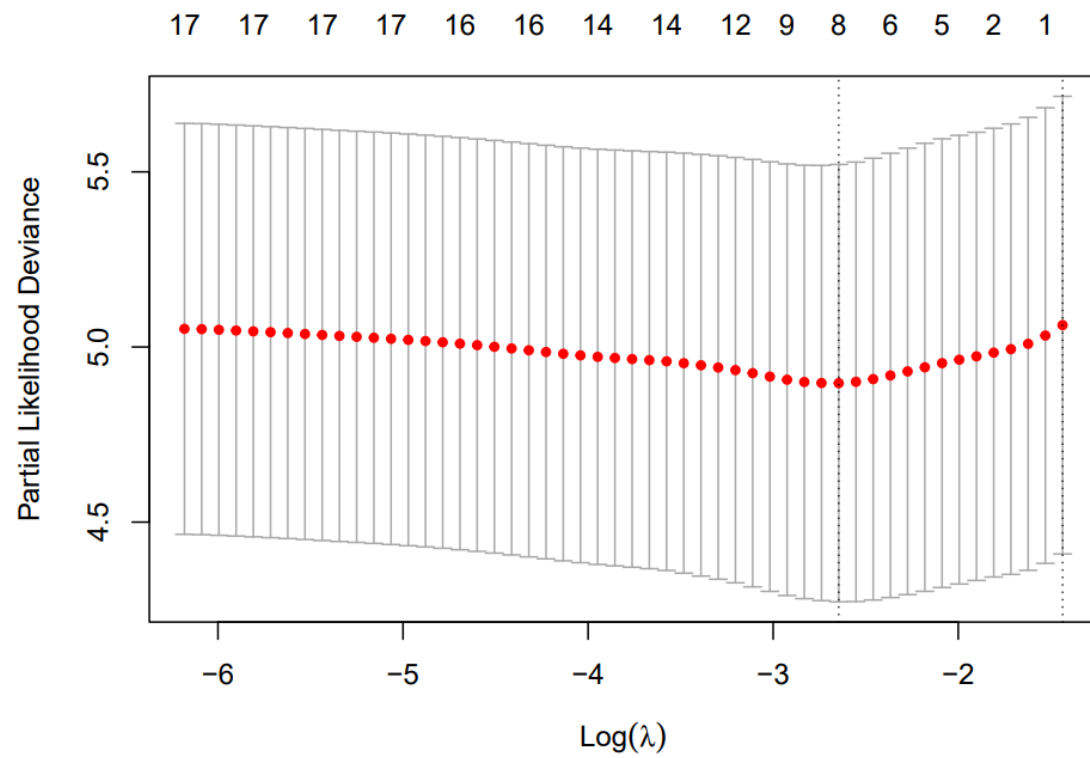
Supplementary figure 1 Distribution of patients at different onset ages of pulmonary hemorrhage after birth (Blue histogram represents infants who experienced pulmonary hemorrhage. Orange histogram represents infants who died after pulmonary hemorrhage.)



Supplementary figure 2 Graph of Lasso regression (The horizontal axis represents the Log Lambda value. The vertical axis represents the coefficient.)



Supplementary figure 3 Graph of the variable screen by Lasso regression (The horizontal axis represents the Log Lambda value. The vertical axis represents partial likelihood deviance.)



Supplementary figure 4 Kaplan-Meier curve (Blue line represents infants with an onset time of more than 3 days. Red line represents infants with an onset time of less than 3 days.)

