Category :**Cardiovascular: cardiac arrest\CPR**

A107 - ***Mortality risk estimation for peri-operative cardiac arrest and 30-day-mortality in preterm infants requiring non-cardiac surgery***

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Introduction:

The aim of this study was to develop a risk calculation for 30-day mortality in the context of perioperative anaesthesiological care of preterm infants in non-cardiac surgery.

Methods:

Monocentric follow-up study of 22,650 paediatric anaesthesias at a German university hospital and level one perinatal center between 2007-2020. Inclusion criteria were age <37 gestational weeks at the time of surgery. The primary endpoint was 30-day mortality. The data collected included weight at time of surgery, time of surgery and the need for catecholamine therapy. For statistical analysis, univariate and multivariate logistic regressions were used.

Results:

Between 2007 and 2020, a total of 268 preterm infants underwent surgery. The 30-day mortality was 10.5% (27/268;CI95%:6.7-14.3) with weight at time of surgery (≥2,000g:1.1%; 1999-1,000g:10.1%; 999-750g:18.2%; <750g: 30.3%), time of surgery (7:01-15:00:7.2%; 15:01-22:00:11.4%; 22:01-7:00:30.8%) and the need for catecholamine therapy (22.3%) as significant predictors in the multivariate regression analysis. Table 1 shows an overview of the identified risk factors and the predicted (multivariate regression model) vs. observed mortality (p=0.27).

Conclusion:

Perioperative 30-day mortality of preterm infants during non-cardiac surgery is higher than previously thought. The risk calculation from the easily ascertainable factors (i.e. low body weight at the time of surgery, time of the surgical intervention and catecholamine therapy) could be a valuable tool for estimating 30-day perioperative mortality in preterm infants and should be validated in larger populations.

Table:

Weight (g)	Catecholamine therapy	Time	Predicted Mortality (%)	Observed Mortality (%)
≥2.000	No	7:00-22:00	0.8	1.3
1.000-1.999	No	7:00-22:00	5.4	3.0
	No	22:01-7:00	20.7	16.7
	Yes	7:00-22:00	15.1	22.7
	Yes	22:01-7:00	44.9	50.0
750-999	No	7:00-22:00	8.5	13.3
	No	22:01-7:00	29.6	40.0

Predicted and observed perioperative mortality of preterm infants undergoing non-cardiac surgery