Laura Ferreira Dutra, Ana Beatriz Gonçalves, Luis k. Oharomari Junior, Maemi Casanas Okumura, Melina Fayad Vieira, Daniela Nanni Rinaldi, Davi Casale Aragon, Walusa Assad Gonçalves- Ferri
Department of Pediatrics, Ribeirão Preto School of Medicine, University of São Paulo

BACKGROUND

- In very low birth weight infants (VLBW), hypothermia is associated with a worse outcome.
- The rewarming is done quickly after admission to our unit and there are no data about the effects of rewarming on the pulmonary aspects in preterm infants.

OBJECTIVE

The objective of this study is to evaluate the relationship between the rapid rewarming and ventilatory outcomes.

METHODS

- Retrospective study.
- Included: VLBW infants born from January 1st to December 31st 2017.
- Excluded: severe malformations, deaths in the delivery room or before 24 hours of life.
- Study groups according to body temperature at admission in NICU:
 - ✧ Group 1: Moderate/severe hypothermia ($T \leq 35.9^{\circ} \text{C}$)
 - ✧ Group 2: Mild hypothermia ($T: 36-36.4^{\circ} \text{C}$)
 - ✧ Group 3: Normothermia ($T \geq 36.5^{\circ} \text{C}$).
- Analyzed gasometries collected at admission and collected up to 24 hours after rewarming and the ventilatory parameters in both.
- The rewarming of the hypothermic patients was done by activating the air mode of the incubator, regardless of the degree of hypothermia, aiming the normothermia in up to 1 hour.
- The analysis was done with Wilcoxon non-parametric test for paired data-by hypothermia group and non parametric Kruskal-Wallis test.

RESULTS

- The rewarming had no impact on ventilatory and gasometric parameters, regardless of the temperature level (table1).
- No significant variations were observed between pre and post reheat parameters (table 1).
- Rapid rewarming is not related to other pulmonary outcomes (table2).

Figure 1. Study desing

Table 1: Avaluation of the variation of the gasometric and ventilatory parameters before and after reheating according to the study group

Group 1		Group 2		Group 3	
Variable	p-value	Variable	p-value	Variable	p-value
FR	0.74	FR	0.27	FR	0.03
PI-PEEP	0.17	PI-PEEP	0.27	PI-PEEP	0.13
FIO ₂	0.06	FIO ₂	0.89	FIO ₂	0.25
PH	0.11	PH	0.64	PH	0.28
PCO ₂	0.45	PCO ₂	0.24	PCO ₂	0.66
HCO ₃	0.56	HCO ₃	0.24	HCO ₃	0.61
SATO ₂	0.28	SATO ₂	0.30	SATO ₂	0.23

Table 2: Association between levels of hypothermia and pulmonary outcomes, after rewarming.

	Group 1	Group 2	Group 3	p-value
Intubation delivery room (%)	65.30	47.30	70.80	0.31
Pneumonia (%)	0.00	0.00	4.10	0.60
BPD (%)	27.20	5.20	25.00	0.17

CONCLUSION

- Rapid rewarming in preterm infants is not associated with pulmonary functional abnormalities and / or unfavorable pulmonary outcomes.