

Relationship between admission temperature and risk of cerebral palsy in infants admitted to Special Care Unit in a low resource setting: a retrospective single-center study

Chiara Guadagno¹, Francesco Cavallin², Luca Brasili¹, Donald Micah Maziku³, Gaetano Azzimonti¹, Giovanni Putoto¹, Andrea Pietravalle¹, Daniele Trevisanuto^{4,*}

¹Doctors with Africa CUAMM.

²Independent Statistician.

³St. John of the Cross, Tosamaganga Council Designated Hospital, Tosamaganga, Tanzania.

⁴Department of Woman's and Child's Health, University of Padua, Padua, Italy.

DOI: 0.36129/jog.2022.S119

Objective. Deviations from normothermia affect early mortality and morbidity, but the impact on neurodevelopment of the survivors is unclear. We aimed to investigate the relationship between neonatal temperature at admission and the risk of cerebral palsy (CP) at one month of age in a low-resource setting.

Materials and Methods. This retrospective study included all inborn neonates admitted to the Special Care Unit of Tosamaganga Hospital (Tanzania) between 1 January 2019 and 31 December 2020. The neurological examination at one month of age was performed using the Hammersmith method. The relationship between the admission temperature and the risk of CP was investigated using logistic regression models, with temperature modeled as the non-linear term.

Results. High/moderate risk of CP was found in 40/119 (33.6%) of the neonates at one month of age. A non-linear relationship between the admission temperature and moderate/high risk of CP at one month of age was found. The lowest probability of moderate/high risk of CP was estimated at admission temperatures of between 35 and 36 °C, with increasing probability when departing from such temperatures.

Conclusions. In a low-resource setting, we found a U-shaped relationship between the admission temperature and the risk of CP at one month of life. Expanding the analysis of the follow-up data to 12-24 months of age would be desirable in order to confirm and strengthen such findings.

Figure 1. Estimated proportion of high/moderate risk of cerebral palsy at 1 month of age. Shaded areas represent bootstrap 95% confidence intervals.

