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Admission hypothermia in very low birth weight newborns at Charlotte Maxeke Johannesburg Academic Hospital

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ABSTRACT

Background: Hypothermia is associated with increased morbidity and mortality rates. Very low birth weight (VLBW) newborns are at an increased risk of hypothermia especially within the first few hours after delivery.

Objectives: To determine the prevalence, associated risk factors, and outcomes of admission hypothermia in VLBW newborns, at Charlotte Maxeke Johannesburg Academic Hospital (CMJAH), a quaternary hospital in Johannesburg, South Africa.

Methods: This was a retrospective descriptive study of all VLBW newborns born over a seven year period (from 1st January 2013 to 31st December 2019) at CMJAH. Comparisons between hypothermic and normothermic newborns as well as between moderately-to-severely hypothermic and mildly hypothermic newborns were done. Multivariate binary logistic regression with 95% confidence interval and a p-value of < 0.05 was used to identify variables which had a significant association.

Results: Mean gestational age and birthweight of enrolled newborns was 28.9 ± 2.7 weeks and 1097 ± 250 g respectively. Prevalence of admission hypothermia was 61.5 % of which 54.3% was mild hypothermia, 43.9 % was moderate hypothermia and 1.8 % was severe hypothermia. VLBW newborns with hypothermia were more likely to have a birthweight < 1000 g [aOR 1.37 (1.12-1.68)] and less likely to be associated with early onset sepsis [aOR 0.51 (0.30-0.88)]. VLBW newborns with moderate to severe hypothermia were less likely than those with mild hypothermia to have received antenatal steroids [aOR 0.66 (0.48-0.89)]. There was no significant association of mortality in either VLBW newborns with hypothermia as compared to those with normothermia [aOR 0.95 (0.76-1.19), p value 0.67] or in VLBW newborns with moderate to severe hypothermia as compared to those with mild hypothermia [aOR 0.76 (0.46-1.26), p value 0.29].

Conclusions: Prevalence of admission hypothermia in VLBW newborns is high and reinforces the need for thermoprotective measures in this population.

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