

Effect of Hanging White Bedsheet Around Phototherapy Unit on TSB Level in Neonatal Jaundice: A Comparative Study

Chong Li Tsu¹, Shalin Lee Wan Fei^{2*}, Chan Kim Geok², Saloma Pawi², Feryante Rintika², Drina Dalie³

¹ Nursing Department, Faculty of Medicine and Health Sciences, Universiti Malaysia Sabah, UMS Road, 88450 Kota Kinabalu, Sabah, Malaysia

² Department of Nursing, Faculty of Medicine and Health Sciences, Universiti Malaysia Sarawak

³ Sabah Women and Children Hospital, Ministry of Health, Kota Kinabalu, Sabah, Malaysia

*Corresponding author: lwfshalin@unimas.my

ABSTRACT

Introduction: Phototherapy is the primary treatment for neonatal jaundice and is evaluated via total serum bilirubin (TSB) level. Hanging white material around phototherapy unit can multiply energy delivery by many folds. This study is to evaluate the effect of hanging white bedsheet around phototherapy unit on the reduction of TSB level. **Methods:** Comparative interventional study was conducted in two public hospitals. 200 eligible neonates with hyperbilirubinemia were recruited and assigned to intervention (n=100) and control group (n=100). Neonates assigned into intervention group were nursed under phototherapy with the addition of white bedsheet hanging around the unit while the control group were nursed under phototherapy with non-white curtains. **Results:** Mothers' blood group ($x = 3.75$, $p = .29$), neonates' blood group ($x = 2.87$, $p = .41$), birth weight ($t = 1.41$, $p = .16$), baseline total serum bilirubin (TSB) level ($p = .08$), baseline irradiance of phototherapy prior to the hanging of curtains ($p = .13$) and hours of phototherapy ($p = .53$). The mean for TSB level in intervention and control group at 24 hours was $235.82\mu\text{mol/L}$ and $208.67\mu\text{mol/L}$ respectively. The mean difference in TSB level between intervention and control group was statistically significant at 24 hours ($x = 27.15$, $t = 4.56$, $p < .001$) and 48 hours ($x = 19.27$, $t = 2.32$, $p = .02$) after initiation of phototherapy. **Conclusion:** The baseline and demographic characteristics of the neonates and mothers were comparable between the intervention and control group. The TSB level at 24 hours and 48 hours were significantly lower in control group if compared to the intervention group. Therefore, hanging white bedsheet did not significantly hasten the reduction of TSB level when compared to ordinary non-white curtains.

Keywords: Phototherapy, neonatal jaundice, total serum bilirubin level, hanging white material