Service Priorities and Programmes

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Potiential factors influencing Nurses' Decision on Handling Preterm Infants' Oxygen Saturation

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Introduction

Most of the preterm infants being admitted to the neonatal intensive care unit (NICU) required oxygen therapy, either invasive or non-invasive support. Various studies stated that preterm infants exposed over-oxygenation would face increased risk of complications, namely, Retinopathy of Prematurity (ROP), chronic neonatal lung disease, Narcotising Enterocolitis (NEC),and on the other hand, hypoxia may result in higher mortality rate. Although those studies are not conclusive, it is, nevertheless, in the interest of the patients if we can balance the benefit and risks (hypoxia and hyperoxia) when using oxygen. To achieves this, we simply need to fine-tune the oxygen concentration such that the patients' oxygen saturations (SpO2) are maintained to within a recommended range at 85 to 95%

Objectives

To assess the potential factors influencing nurses' decision on maintaining target SpO2 of preterm infants

Methodology

1.) A retrospective chart review of the SpO2 chartings from the computer information system was carried out within the period 11/12/2012 to 15/12/2012, at the NICU ward K10N of Queen Mary Hospital. 2.) The studied group was babies whose (1) corrected ages were less than 37 weeks and (2) requiring oxygen therapy either on invasive or non-invasive support regardless the types of oxygen device used

Result

Among the 480 collected SpO2 chartings, 73 (15.2%) showed SpO2 above 95% while none showed SpO2 below 85%. Of the 73 samples, 71 (97.3%) were contributed by staff with under 5-year of experience. This indicated an education need for inexperienced nurses. Of the 73 samples, 29 (39.3%) were extremely low body weight (660 gram) baby who was requiring invasive ventilator support but with relatively low Friction of Inspired Oxygen (FiO2) usage (0.25-0.3). There was no significant difference in the number of inappropriate chartings between shifts of duty. Discussion

By comparing with the studies of Johnson et al (2011), Van der Eijk et al (2012) and Lau et al (2011), several mutual factors were identified as the factors that may influence nurses' decision on oxygen titration, namely knowledge, experience and ward culture. With this knowledge an education programme can be created targeting inexperienced nurses' awareness and knowledge on neonatal oxygen usage management. Moreover, written guidelines are to be compiled to guide the nurses' decision on handling the oxygen saturation and gradually developing a culture of optimal oxygen titration. Conclusion: Knowledge and experience are the factors that influence nurses' decision on oxygen titration. Education programme and written guidelines may be set up accordingly.