patients (32%) recieved more than 630cc/kg from the 2nd to 6th day of life. Those who recieved more fluids from the 2nd to 6th day of life were found to have recieved more blood transfusion (p=0.035). The presence of hypotension, total days of phototherapy and excessive body weight loss of > 15% of birth body weight in the first six days of life were statistically similar in both groups (p=0.76, 0.052, 0.0356 respectively). In addition, total volume of red blood cell transfusions was found to be related to the occurence of CLD (p=0.019).

Conclusions: This study shows that excessive fluid intake of more than 630cc/kg from the 2nd to 6th day of life is associated with increased risk of severe chronic lung disease. Blood product transfusions are an import cause of excessive fluid intake within the first few days of life. Our findings underscore the importance of avoiding excessive hydration and liberal blood product transfusion within the first few days of life.

23 Early Erythropoietin Administration didn't Increase the Risk of Retinopathy of Prematurity

紅血球生成素對早產兒是網膜病變的影響

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Background: Early erythropoietin (EPO) to prevent anemia of prematurity is associated with significant increase in the rate of retinopathy of prematurity (ROP) in several meta-analysis. We hypothesis that early EPO administration in preterm infants may not increase the risk of ROP after year of 2003 when clinician adopted the lower oxygen saturation strategy to prevent ROP.

Objectives: To assess the safety of early initiation of EPO on severe ROP in preterm and/or low birth weight infants.

Methods: The Cochrane Central Register of Controlled Trials (The Cochrane Library), MEDLINE, EMBASE, CINAHL, abstracts from scientific meetings published in Pediatric Research and reference lists of identified trials and reviews were searched through July1996 to 2012 including searches of Pediatric Academic Societies Annual meetings 2000 to 2012 (Abstracts2ViewTM) and clinical trials registries (clinicaltrials.gov; controlled-trials.com; and who.int/ictrp). Randomised or quasi-randomised controlled trials of early (< eight days of age) initiation of EPO treatment versus placebo or no intervention in preterm and/or low birth weight neonates were enrolled.

Data collection and analysis: Data collection and analysis were accomplished using the methods of the Neonatal Cochrane Review Group.

Results: infants. A number of randomised controlled trials were excluded as they compared one EPO dosing regimen with another, did not provide the numbers of infants randomised to the EPO and the placebo group, or the dose of EPO was not stated. The update includes 11 studies that enrolled 1778 preterm infants. Early EPO did increase the risk of any stage of ROP before 2003, 156/540 infants was in the EPO group vs 117/513 in the control group [P =0.01 (95% confidence interval (CI) 1.10 to 1.99). Early EPO didn't increase the risk of any stage of ROP after 2003, 38/187 infants was in the EPO group vs 43/184 in the control group [P =0.60; (95% CI 0.53 to 1.44). There was no heterogeneity for this outcome (P = 0.29; I^2 = 17.0%). Same finding was in the severe ROP (>stage3). Before 2003, 57/448 infants was in the EPO group vs 33/442 in the control group [P =0.01 (95% CI 1.13 to 2.52); after 2003, 3/52 infants was in the EPO group vs 2/42 in the control group [P =0.79 (95% CI 0.28 to 5.33). The rates for mortality and other neonatal morbidities were not significantly changed by early EPO treatment nor were neurodevelopmental outcomes at 18 to 22 months in the small number of infants tested to-date.

Conclusions. Early administration of EPO didn't significantly increase in the rate of ROP (stage ≥ 3) after 2003 when lower oxygen saturation was adopted by most center. Early EPO did not significantly decrease or increase any of the other important adverse outcomes. Ongoing research should deal with the impact of early EPO on ROP by randomized control trials with lower oxygen saturation.

24 Assessment of Left Ventricular Performance during Ligation for Patent Ductus Arteriosus in Very Low Birth Weight Infants: a Prospective Study Using Electrical Cardiometry

評估開放性導管結紮術對非常低體重兒左心室功能之影響：利用電子心監視器的前瞻性研究

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Background: Electrical cardiometry (EC) is an impedance-based monitor providing real-time cardiovascular assessment and is currently the only non-invasive hemodynamic monitor available in neonates. Our previous study showed that surgical ligation of a patent ductus arteriosus (PDA) may cause transient decrease in cardiac output (CO) in very low birth weight (VLBW) infants, as measured by EC. While EC provides assessment of multiple physiological parameters contributing to the change of CO, it can be used as a non-invasive method to study mechanisms leading to hemodynamic aberration. We aimed to further delineate the mechanisms of decreased CO