S.T.A.B.L.E. Instructors: The following articles may impact the next edition of The S.T.A.B.L.E. Program

Articles related to Neonatal Hypoglycemia and Dextrose Gel

Boluyt, N., van Kempen, A., & Offringa, M. (2006). Neurodevelopment after neonatal hypoglycemia: a systematic review and design of an optimal future study. *Pediatrics, 117*(6), 2231-2243. doi:10.1542/peds.2005-1919

Brown, L. D., & Rozance, P. J. (2016). A Sweet Addition for the Treatment of Neonatal Hypoglycemia. *The Journal of pediatrics, 170*, 10-12. doi:10.1016/j.jpeds.2015.12.036

Burns, C. M., Rutherford, M. A., Boardman, J. P., & Cowan, F. M. (2008). Patterns of cerebral injury and neurodevelopmental outcomes after symptomatic neonatal hypoglycemia. *Pediatrics, 122*(1), 65-74. doi:10.1542/peds.2007-2822

Chandrasekharan, P. and S. Lakshminrusimha (2017). "Single dose of prophylactic oral dextrose gel reduces neonatal hypoglycaemia." *Evid Based Med* 22(2): 62.

Cornblath, M., & Schwartz, R. (1999). Outcome of neonatal hypoglycaemia. Complete data are needed. *BMJ, 318*(7177), 194-195.

Croke, J., Sullivan, M., Ryan-Drover, A., Randell, E., Andrews, W., & Aziz, K. (2009). Two hour blood glucose levels in at-risk babies: An audit of Canadian guidelines. *Paediatrics & child health, 14*(4), 238-244.

Harding, J. E., et al. (2017). "Corrigendum to "An emerging evidence base for the management of neonatal hypoglycemia" [Early Hum. Dev. 2017; 104: 51-56]." Early Hum Dev 108: 61.

Harding, J. E., et al. (2017). "An emerging evidence base for the management of neonatal hypoglycaemia." *Early Hum Dev* 104: 51-56.

Harding, J. E., et al. (2015). "Randomised trial of neonatal hypoglycaemia prevention with oral dextrose gel (hPOD): study protocol." *BMC pediatrics* 15: 120.

Harris, D. L., et al. (2012). "Incidence of neonatal hypoglycemia in babies identified as at risk." *The Journal of pediatrics* 161(5): 787-791.

Harris, D. L., Alsweiler, J. M., Ansell, J. M., Gamble, G. D., Thompson, B., Wouldes, T. A., . . . their Later Development, C. S. T. (2016). Outcome at 2 Years after Dextrose Gel Treatment for Neonatal Hypoglycemia: Follow-Up of a Randomized Trial. *The Journal of pediatrics, 170*, 54-59 e52. doi:10.1016/j.jpeds.2015.10.066

Harris, D. L., Gamble, G. D., Weston, P. J., & Harding, J. E. (2017). What Happens to Blood Glucose Concentrations After Oral Treatment for Neonatal Hypoglycemia? *The Journal of pediatrics*. doi:10.1016/j.jpeds.2017.06.034

Harris, D. L., Weston, P. J., Signal, M., Chase, J. G., & Harding, J. E. (2013). Dextrose gel for neonatal hypoglycaemia (the Sugar Babies Study): a randomised, double-blind, placebo-controlled trial. *Lancet, 382*(9910), 2077-2083. doi:10.1016/S0140-6736(13)61645-1

Hay Jr, W. W., Raju, T. N. K., Higgins, R. D., Kalhan, S. C., & Devaskar, S. U. (2009). Knowledge Gaps and Research Needs for Understanding and Treating Neonatal Hypoglycemia: Workshop Report from Eunice Kennedy Shriver National Institute of Child Health and Human Development. *The Journal of pediatrics, 155*(5), 612-617. doi:10.1016/j.jpeds.2009.06.044

Hegarty, J. E., Harding, J. E., Gamble, G. D., Crowther, C. A., Edlin, R., & Alsweiler, J. M. (2016). Prophylactic Oral Dextrose Gel for Newborn Babies at Risk of Neonatal Hypoglycaemia: A Randomised Controlled Dose-Finding Trial (the Pre-hPOD Study). *PLoS Med, 13*(10), e1002155. doi:10.1371/journal.pmed.1002155

Kaiser, J. R., Bai, S., Gibson, N., Holland, G., Lin, T. M., Swearingen, C. J., . . . ElHassan, N. O. (2015). Association Between Transient Newborn Hypoglycemia and Fourth-Grade Achievement Test Proficiency: A Population-Based Study. *JAMA Pediatr, 169*(10), 913-921. doi:10.1001/jamapediatrics.2015.1631

Kerstjens, J. M., Bocca-Tjeertes, I. F., de Winter, A. F., Reijneveld, S. A., & Bos, A. F. (2012). Neonatal morbidities and developmental delay in moderately preterm-born children. *Pediatrics, 130*(2), e265-272. doi:10.1542/peds.2012-0079

Lucas, A., Morley, R., & Cole, T. J. (1988). Adverse neurodevelopmental outcome of moderate neonatal hypoglycaemia. *BMJ, 297*(6659), 1304-1308.

Lucas, A., Morley, R., & Cole, T. J. (1998). Randomised trial of early diet in preterm babies and later intelligence quotient. *BMJ, 317*(7171), 1481-1487.

McKinlay, C. J., Alsweiler, J. M., Ansell, J. M., Anstice, N. S., Chase, J. G., Gamble, G. D., . . . Group, C. S. (2015). Neonatal Glycemia and Neurodevelopmental Outcomes at 2 Years. *N Engl J Med, 373*(16), 1507-1518. doi:10.1056/NEJMoa1504909

McKinlay, C. J. D., Alsweiler, J. M., Anstice, N. S., Burakevych, N., Chakraborty, A., Chase, J. G., . . . Their Later Development Study, T. (2017). Association of Neonatal Glycemia With Neurodevelopmental Outcomes at 4.5 Years. *JAMA Pediatr*. doi:10.1001/jamapediatrics.2017.1579

Rawat, M., Chandrasekharan, P., Turkovich, S., Barclay, N., Perry, K., Schroeder, E., . . . Lakshminrusimha, S. (2016). Oral Dextrose Gel Reduces the Need for Intravenous Dextrose Therapy in Neonatal Hypoglycemia. *Biomed Hub, 1*(3). doi:10.1159/000448511

Stanley, C. A., Rozance, P. J., Thornton, P. S., De Leon, D. D., Harris, D., Haymond, M. W., . . . Wolfsdorf, J. I. (2015). Re-evaluating "transitional neonatal hypoglycemia": mechanism and implications for management. *The Journal of pediatrics, 166*(6), 1520-1525 e1521. doi:10.1016/j.jpeds.2015.02.045

Thornton, P. S., Stanley, C. A., De Leon, D. D., Harris, D., Haymond, M. W., Hussain, K., . . . Pediatric Endocrine, S. (2015). Recommendations from the Pediatric Endocrine Society for Evaluation and Management of Persistent Hypoglycemia in Neonates, Infants, and Children. *The Journal of pediatrics, 167*(2), 238-245. doi:10.1016/j.jpeds.2015.03.057

Tin, W., Brunskill, G., Kelly, T., & Fritz, S. (2012). 15-year follow-up of recurrent "hypoglycemia" in preterm infants. *Pediatrics, 130*(6), e1497-1503. doi:10.1542/peds.2012-0776

Weston, P. J., Harris, D. L., Battin, M., Brown, J., Hegarty, J. E., & Harding, J. E. (2016). Oral dextrose gel for the treatment of hypoglycaemia in newborn infants. *Cochrane database of systematic reviews*(5), CD011027. doi:10.1002/14651858.CD011027.pub2

Weston, P. J., et al. (2017). "Dextrose gel treatment does not impair subsequent feeding." *Archives of disease in childhood. Fetal and neonatal edition.* doi*:* 10.1136/archdischild-2017-312772

Issues Related to Maternal Obesity

Aune, D., O. D. Saugstad, et al. (2014). "Maternal body mass index and the risk of fetal death, stillbirth, and infant death: a systematic review and meta-analysis." *JAMA : the journal of the American Medical Association* 311(15): 1536-1546.

RESULTS: Thirty eight studies (44 publications) with more than 10,147 fetal deaths, more than 16,274 stillbirths, more than 4311 perinatal deaths, 11,294 neonatal deaths, and 4983 infant deaths were included. The summary RR per 5-unit increase in maternal BMI for fetal death was 1.21 (95% CI, 1.09-1.35; I2 = 77.6%; n = 7 studies); for stillbirth, 1.24 (95% CI, 1.18-1.30; I2 = 80%; n = 18 studies); for perinatal death, 1.16 (95% CI, 1.00-1.35; I2 = 93.7%; n = 11 studies); for neonatal death, 1.15 (95% CI, 1.07-1.23; I2 = 78.5%; n = 12 studies); and for infant death, 1.18 (95% CI, 1.09-1.28; I2 = 79%; n = 4 studies). The test for nonlinearity was significant in all analyses but was most pronounced for fetal death. For women with a BMI of 20 (reference standard for all outcomes), 25, and 30, absolute risks per 10,000 pregnancies for fetal death were 76, 82 (95% CI, 76-88), and 102 (95% CI, 93-112); for stillbirth, 40, 48 (95% CI, 46-51), and 59 (95% CI, 55-63); for perinatal death, 66, 73 (95% CI, 67-81), and 86 (95% CI, 76-98); for neonatal death, 20, 21 (95% CI, 19-23), and 24 (95% CI, 22-27); and for infant death, 33, 37 (95% CI, 34-39), and 43 (95% CI, 40-47), respectively.

CONCLUSIONS AND RELEVANCE: Even modest increases in maternal BMI were associated with increased risk of fetal death, stillbirth, and neonatal, perinatal, and infant death. Weight management guidelines for women who plan pregnancies should take these findings into consideration to reduce the burden of fetal death, stillbirth, and infant death.

Hernandez, T. L. (2015). "Glycemic targets in pregnancies affected by diabetes: historical perspective and future directions." *Curr Diab Rep* 15(1): 565.

Maresh, M. J., V. A. Holmes, et al. (2015). "Glycemic targets in the second and third trimester of pregnancy for women with type 1 diabetes." *Diabetes care* 38(1): 34-42.

Issues Related to Neuroprotective Therapeutic Hypothermia

Shankaran, S., A. R. Laptook, et al. (2014). "Effect of depth and duration of cooling on deaths in the NICU among neonates with hypoxic ischemic encephalopathy: a randomized clinical trial." *JAMA : the journal of the American Medical Association* 312(24): 2629-2639.

CONCLUSIONS AND RELEVANCE: Among neonates who were full-term with moderate or severe hypoxic ischemic encephalopathy, longer cooling, deeper cooling, or both compared with hypothermia at 33.5 degrees C for 72 hours did not reduce NICU death. These results have implications for patient care and design of future trials.

Page 2635: Longer duration of cooling was associated with more arrhythmia and anuria and longer hospital days, whereas deeper cooling was associated with higher use of inhaled nitric oxide, ECMO, more days of oxygen, and higher incidence of bradycardia. TRIAL REGISTRATION: clinicaltrials.gov Identifier: NCT01192776.

Basu, S. K., et al. (2016). "Hypoglycaemia and hyperglycaemia are associated with unfavourable outcome in infants with hypoxic ischaemic encephalopathy: a post hoc analysis of the CoolCap Study." *Archives of disease in childhood. Fetal and neonatal edition* 101(2): F149-155.