CCT: NEONATAL UMBILICAL ARTERY CATHETERIZATION

PURPOSE
A. Umbilical artery catheterization (UAC) may be performed by a Transport Team member. The decision to perform a UAC should be based upon the severity of the infant’s condition

SCOPE
A. This guideline applies to all members of the Indiana University Lifeline Critical Care Transport team.

EXCEPTIONS
A. Any exceptions to this policy must be approved by the neonatal control physician.
B. Contraindications to umbilical arterial catheter placement include:
   a. Evidence of local vascular compromise in the lower limbs or gluteal region.
   b. Peritonitis.
   c. Necrotizing enterocolitis, intestinal obstruction or imperforate anus.
   d. Omphalitis.
   e. Omphalocele or Gastrochisis.
   f. Acute abdomen.
   g. Patent urachus.

DEFINITIONS
Umbilical Arterial Catheter: a catheter placed in the umbilical artery of a neonate for the purpose of monitoring continuous central blood pressure, intermittent blood sampling and the administration of IV solutions.

GUIDELINES
A. Umbilical arterial lines should be considered for patients who required frequent measurement of arterial blood gases, lactates, multiple lab draws and continuous measurement of arterial blood pressures or need for vascular access.
B. Complications of umbilical arterial lines can included movement, leakage or breakage of the catheter, vascular accidents including vasospasm, infarction or loss of an extremity, bleeding from umbilicus, infection or damage to adjacent structures.
C. Appropriate fluids for infusion include Normal Saline (0.9, 0.45), Sodium Acetate (0.9, 0.45) and Dextrose infusions (Dextrose should be cleared with the control physician).
D. Equipment needed for this procedure include: Umbilical line insertion tray, sterile gloves, mask and gown, Iodine antiseptic solution, flush solution, 3.5 or 5 French single or double umbilical catheter.
PROCEDURE
A. Restrain the neonate’s arms and legs.
B. Calculate insertions depth ((weight (kg) x 3) + 9).
C. Prepare sterile tray and equipment.
D. Prime the catheter with sterile normal saline 0.9% and flush the catheter and turn stopcock to the off position.
E. Prep skin with appropriate cleaner for sterile procedure and place umbilical tie once dried.
F. Cover area surrounding cord with sterile drapes.
G. Cut cord horizontally with scalpel, approximately 1cm from skin.
H. Blot surface of cord stump with gauze swab, do not rub as this may damage the tissue and obscure the anatomy.
I. Identify cord vessels.
J. Grasp cord stump using forceps close to the artery to be cannulated.
K. Dilate the artery to be cannulated slowly with one of the curved iris forceps and probe gently to a depth of 0.5cm.
L. Inset primed umbilical catheter into the dilated artery and gently advance to pre-identified depth.
M. Aspirate blood and flush catheter to assure patency.
N. Suture line in place with appropriate material and obtain KUB to check line placement.
O. Once appropriate, loosen umbilical tie and monitor for bleeding.
P. Adjust catheter insertion depth based on KUB.
Q. Begin fluids.
R. Monitor for arterial changes in lower extremities and buttocks.
S. Required documentation includes:

Required Documentation:
A. Catheter size.
B. Placement on X-Ray.
C. Presence of blood return.
D. Alterations in lower extremity perfusion.

Citations/References: