

Developmental and Family-centered Care Issues involving Neonates with UVC's in the ICN Critically Appraised Topic (CAT)

PICOT Question:

Is it safe and appropriate for infants with UVC's in place in the ICN to be held, dressed, swaddled, and to participate in kangaroo care?

Clinical bottom line based on literature appraisal below:

Infants with UVC's placed above the diaphragm may be held by their parents with a blanket lightly covering them and an RN in the vicinity to monitor them. If the UVC is low-lying, this should be done rarely – only if the RN and provider agree that benefit exceeds risk of UVC dislodgement. If the UVC is positioned above the diaphragm, the infant may be dressed in a tee shirt (no onesies or sleepers). He or she may also be swaddled, as long as the upper and lower body is swaddled separately, and the umbilical area is easily visible. Infants with UVC's above the diaphragm may also participate in kangaroo care, if otherwise stable, the parents are properly instructed regarding precautions, and an RN is in the vicinity to monitor them.

Search strategy implemented:

Google was searched using the search terms “umbilical venous catheter guidelines or restrictions”. Pubmed was also searched using the following search terms: (“Umbilical Veins” {Mesh} AND “catheterization, central venous” {Mesh}) or “umbilical venous catheter”.

Search outcome:

Most articles and texts addressed the indications for and procedure to insert UVC's. 19 articles addressed UVC management and care. Only 2 of these commented upon holding and swaddling babies with UVC's.

Synthesis of relevant studies:

Author, date, country, and industry of funding	Patient Group	Level of Evidence (Oxford) / Strength of Evidence (GRADE)	Research design	Significant results	Limitations
Verger and Lebet, 2007, USA, AACN	Neonates in the ICN with UVC's in place	L of E = 5; S of E = D; GRADE = Weak recommendation	Procedure/protocol	States parents may not be able to hold baby, due to need to observe umbilical site and minimize risk of dislodgement. Refers reader to institution-specific protocol.	No clear recommendation nor references.

Merenstein and Gardner, 2006, USA	Neonates in the ICN with UVC's in place	L of E = 5, S of E = D; GRADE = weak recommendation	textbook	States "it may be unwise" for parents to hold baby or for baby to be "wrapped" in blankets if UVC is in place, due to decreased ability to monitor line integrity; recommends "using care" if doing so.	No clear recommendation nor references.

Commentary:

Due to minimal articles with only weak recommendations regarding holding and swaddling infants with UVC's, as well as a reference to following institutional policies, a short survey was sent via email to VON ICN's, regarding their practice related to holding, dressing and swaddling, and allowing kangaroo care for infants with UVC's in place. Ten responses were obtained over a 2-week time period. They are summarized as follows. Holding babies with UVC's: 9/10 allowed parents to hold babies if UVC was "high" (placed above the diaphragm); 3/7 allowed if UVC was "low", only if "benefits exceeded risks" (3 did not use low UVC's). It was recommended that babies be only "lightly covered" and an RN be in the vicinity. Dressing and swaddling babies with UVC's: 4/10 allowed infant to wear a tee shirt only, and/or to be swaddled with the umbilical area fully exposed if the UVC was "high"; 3/7 allowed dressing and swaddling with "low" UVC's with the same stipulations. Kangaroo care for babies with UVC's: 8/10 allowed with "high" UVC's and 2/7 with "low" UVC's.

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References:

Merenstein, G. & Gardner, S. (Eds.). (2006). *Handbook of Neonatal Intensive Care* (6th ed.). St. Louis, MO: Mosby Elsevier.

Verger, J & Lebet, R. (Eds.). (2007). *AACN Procedure Manual for Pediatric Acute and Critical Care*. Philadelphia, PA: Saunders.