To determine feasibility of 2.6-French (Fr) double-lumen PICCs in newborns and compare noninfectious complications such as thrombus formation, catheter breakage, infiltration, and accidental dislodgment and central line-associated bloodstream infection (CLABSI) rate with that of newborn infants treated with 1.9-Fr single- and double-lumen PICCs” O’Malley et al (2018).

Abstract:

BACKGROUND: Low birth-weight infants’ survival continues to improve and there is increased need to provide secure vascular access. This study examines safety of larger peripherally inserted central catheters (PICCs) that offer greater utility.

PURPOSE: To determine feasibility of 2.6-French (Fr) double-lumen PICCs in newborns and compare noninfectious complications such as thrombus formation, catheter breakage, infiltration, and accidental dislodgment and central line-associated bloodstream infection (CLABSI) rate with that of newborn infants treated with 1.9-Fr single- and double-lumen PICCs.

METHODS: Infants requiring PICCs were admitted in our 69-bed level IV neonatal intensive care unit from September 2006 to May 2015. Two distinct groups were compared: the 1.9-Fr-(single-lumen [n = 105]and double-lumen [n = 27]) and 2.6-Fr double-lumen PICCs (n = 111).
Data obtained included birth weight and weight at insertion, gestational age at birth and corrected gestation age at insertion, indication, catheter days, indication for removal, and complications: noninfectious and infectious. Univariate and multivariate statistical analysis evaluated data.

RESULTS: There were no differences regarding gestational age at birth and insertion and indications for placement of 2.6-Fr double-lumen (n =111) and 1.9-Fr both single- and double-lumen (n = 132) PICCs. The same was noted between the groups’ complications. Noninfectious complications were more common in PICCs with peripheral tip location in all groups.

IMPLICATIONS FOR PRACTICE: Consider use of 2.6-Fr PICCs in a neonatal intensive care unit when the utility of blood administration and sampling is required.

IMPLICATIONS FOR RESEARCH: Examine line migration and CLABSI associated with sampling and blood administration.

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