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Background and aim: Peripherally inserted intra-arterial catheters (IAC) are frequently used in both preterm and term neonates for cardiorespiratory monitoring and /or frequent blood sampling. Ultrasound is increasingly used for insertion of vascular access devices particularly in neonates. We report our single-center experience in using ultrasound for insertion of IAC in preterm and term neonates.

Methods: Retrospective review of electronically registered data on ultrasound-guided insertion of IAC from november 2018 to february 2026. Initially only one clinician used ultrasound but during the study period 3 other clinicians started using ultrasound for insertion of IAC.

Results: See table and graphs. The diameters of arteries were recorded for 55 insertions (mean 0,9 ± 0,3 mm; range 0,5 – 1,7 mm) for radial, ulnar and posterior tibial arteries. The diameter of the infraclavicular axillary arteries were 2,0 and 2,2 mm. Below 0.5 mm insertion was not attempted.

Conclusions: ultrasound-guided insertion of IAC is highly successful even in the smallest preterm neonates. Patient weight was associated with first attempt success. Elective removal of LPC is slightly more frequent than for SPC but confounding factor may be that LPC are more frequently inserted in larger neonates.

	Demographics	Range
IAC total	n=128	
No of patients	n=116	
Sex (female)	57 (37%)	
Birthweight	2264 ± 1163g	450 – 4590g
Gestational age	34 ± 5w	24 – 42w
Weight at insertion	2514 ± 1215g	476 – 5000g
Ventilated	86 (67%)	
1 st att	n=92 (74%)	
2 nd att	n=26 (21%)	
3 rd att	n=6 (5%)	
IAC successful	n=124 (97%)	
Dwell time	Median: 4.6d	0.1 – 42.9d
Elective removal	88 (69%)	
Obstruction	31 (24%)	
Transferred	2 (2%)	
Type: SPC / LPC*	73 / 55	

*SPC: short peripheral cannula; LPC: long peripheral cannula

