


Table 1.5. UAC and UVC: Indications for placement, catheter size, infusion solutions, heparin dose, medication administration and contraindications.**Umbilical Vein Catheter (UVC)**

Indications for placement UVC ¹¹⁸⁻¹²⁰	Catheter size ^a UVC ¹²⁵	Infusion solutions UVC ¹²⁶	Heparin dose (Units per mL IV fluid) UVC ¹²⁷	Medication administration UVC ^{126,128}	Contraindications UVC ¹¹⁸
1. To provide emergency fluids and medications during resuscitation 2. Unable to start a peripheral IV in a reasonable time or number of attempts 3. To provide a glucose concentration greater than D _{12.5} W 4. When additional IV access is required for fluids or medications 5. When an exchange transfusion is necessary	< 1.5 kg: 3.5 French >1.5 kg: 5 French Consider using a double-lumen catheter so that medications and fluids may be administered simultaneously	5 to 20% dextrose solution (D ₅ W to D ₂₀ W) is appropriate if the tip is in good position	0.5 to 1 unit per mL of IV fluid	If the catheter tip is properly positioned at the IVC / RA junction, then all medications, including vasopressors (dopamine, dobutamine, epinephrine), may be given in the UVC	Omphalitis Peritonitis Omphalocele Necrotizing enterocolitis
Clinical Tip: A spongy, “bouncing back” feeling of resistance during placement usually indicates the catheter tip is malpositioned in the liver or portal venous system.					

^aSome neonatal texts recommend a 3.5 Fr UAC when the infant weighs less than 1.25 kg.^{122,124,134}

Table 1.5. UAC and UVC: Indications for placement, catheter size, infusion solutions, heparin dose, medication administration and contraindications. *(continued)***Umbilical Artery Catheter (UAC)**

Indications for placement UAC ^{121,122,124}	Catheter size ^a UAC ¹²⁵	Infusion solutions UAC ¹²⁶	Heparin dose (Units per mL IV fluid) UAC ¹²⁷	Medication administration UAC ^{125, 126, 128, 132, 133}	Contraindications UAC ^{119, 122}
<p>1. To monitor arterial blood pressure.</p> <p>2. To allow frequent blood gas analysis.</p> <p>Note: If unable to insert a UAC, additional options include cannulation of the radial or posterior tibialis artery.¹²⁹ Sodium chloride (0.9%) intravenous infusion or half sodium chloride (0.45%) intravenous infusion with 1 unit heparin per mL may be infused in a peripheral arterial line.</p>	<p>< 1.5 kg: 3.5 French</p> <p>>1.5 kg: 5 French</p>	<p>Options:</p> <p>1. Sodium chloride (0.9%) intravenous infusion at 1 to 2 mL/hour to maintain catheter patency.</p> <p>2. 5 to 15% dextrose solution (D₅W to D₁₅W) with or without amino acids.</p> <p>Note: evidence is lacking regarding outcomes or effects related to administration of parenteral nutrition, calcium, medications, (including antibiotics) through the UAC.¹³⁰</p> <p>3. Isotonic amino acid solution with a 0.5 normal saline flush regimen.¹³¹</p> <p>For option 1 and 3, a glucose containing solution should be administered via an alternate intravenous route.</p> <p>If unsure which option to select, consult your tertiary center.</p>	<p>0.5 to 1 unit per mL IV fluid</p>	<p>The UAC is not recommended for medication or blood administration.</p> <div>  Do not administer vasopressors (dopamine, dobutamine, or epinephrine), calcium boluses, or blood in the UAC or in any arterial line. </div>	<p>Omphalitis</p> <p>Peritonitis</p> <p>Omphalocele</p> <p>Vascular compromise in the lower limbs or buttocks</p> <p>Necrotizing enterocolitis</p>

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