1.0 Classification
   • Sympathomimetic

2.0 Mechanism of Action
   • Dopamine increases cardiac output, maintains renal and mesenteric blood flow, causes vasoconstriction and increases systolic blood pressure

3.0 Indications
   • Undifferentiated shock not suspected to be due to hypovolemia
   • Symptomatic or hemodynamically unstable bradycardia

4.0 Contraindications
   • Hypovolemia (hemorrhage, dehydration)

5.0 Precautions
   • Extravasation of dopamine may lead to tissue necrosis
   • Doses exceeding 20 mcg/kg/min will have no beneficial effect
   • Dopamine should not be administered with sodium bicarbonate simultaneously as dopamine is inactivated in alkaline solutions

6.0 Route
   • May be given IV/IO

7.0 Dosage
   Adult
   • The infusion rate is set according to concentration of drug. Start at 5 mcg/kg/min; refer to drip rate chart below. If no change in blood pressure within 5 minutes, increase dose by 3-5 mcg/kg/min every 2 minutes until systolic blood pressure is above 90mmHg.

<table>
<thead>
<tr>
<th>Weight (kg)</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80</th>
<th>80</th>
<th>100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dose (mcg/kg/min)</td>
<td>Rate (mL/hr)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>4</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>3</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>10</td>
<td>11</td>
</tr>
<tr>
<td>4</td>
<td>7</td>
<td>9</td>
<td>10</td>
<td>12</td>
<td>13</td>
<td>15</td>
</tr>
<tr>
<td>5</td>
<td>9</td>
<td>11</td>
<td>13</td>
<td>15</td>
<td>17</td>
<td>19</td>
</tr>
<tr>
<td>6</td>
<td>11</td>
<td>13</td>
<td>16</td>
<td>18</td>
<td>20</td>
<td>22</td>
</tr>
<tr>
<td>7</td>
<td>13</td>
<td>16</td>
<td>18</td>
<td>21</td>
<td>24</td>
<td>26</td>
</tr>
</tbody>
</table>
Pediatric
- The infusion rate is set according to concentration of drug. Start at 5 mcg/kg/min. If no change in blood pressure within 5 minutes, increase dose by 3-5 mcg/kg/min every 2 minutes until patient is no longer hypotensive [note that hypotension in child 1-10 years of age is anything less than 70mmHg + (age x 2)].

8.0 Supplied
- Premixed as 800 mg in 500 mL bag (1600 mcg/mL)

9.0 May Be Given By
- ACP/CCP

10.0 Adverse effects
- Hypertension
- Arrhythmia
- Palpitations
- Nausea/vomiting

11.0 Special notes
- Shock patients require aggressive fluid administration (especially septic shock) therefore normal saline should be initiated prior to dopamine administration
- Focus on fluid administration in patients with hypovolemic shock
- Dosage calculation should be based on ideal body weight
- Pregnancy category C [if the patient will benefit from a Category C drug, it is generally used]

12.0 References
- Out-of-Hospital Cardiac Arrest Clinical Practice Guideline
- Arrhythmia Clinical Practice Guideline
- Shock Clinical Practice Guideline
- Sepsis Clinical Practice Guideline
- Compendium of Pharmaceuticals and Specialties (CPS)

*Electronically Signed
Copyright © Emergency Health Services