**Timing Guidelines**

**Intra-Aortic Balloon Pump**

**Inflation**

**Goal:** To produce a rapid rise in aortic diastolic pressure (optimize AUG), thereby increasing O₂ supply to coronary circulation.

1. Inflate just prior to DN which should result in \( AUG > SYS \)

**Deflation**

**Goal:** To reduce aortic end diastolic pressure (afterload), thereby decreasing MVO₂ while improving the CO (cardiac output).

2. \( ADIA < DIA \)
3. \( ASYS < SYS \)

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**Assisted Arterial Waveform (1:2)**

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Definition</th>
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<tbody>
<tr>
<td>DIA</td>
<td>End Diastolic Pressure</td>
</tr>
<tr>
<td>SYS</td>
<td>Peak Systolic Pressure</td>
</tr>
<tr>
<td>AUG</td>
<td>Diastolic Augmentation/Peak Diastolic Pressure</td>
</tr>
<tr>
<td>ADIA</td>
<td>Assisted End Diastolic Pressure</td>
</tr>
<tr>
<td>ASYS</td>
<td>Assisted Peak Systolic Pressure</td>
</tr>
<tr>
<td>DN</td>
<td>Diastolic Pressure (Systole after IAB deflation)</td>
</tr>
<tr>
<td></td>
<td>Dicrotic Notch</td>
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</tbody>
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**Common Timing Errors**

**Early Inflation**

IAB is inflated well before actual DN (aortic valve closure). Violates Rule 1 for inflation.

- Premature closure of aortic valve.
- Reduces stroke volume/CO.
- Increase in LVSE volume.
- Increase in LV wall tension.

**Late Inflation**

DN is visible between points SYS/AUG. Violates Rule 1 for inflation.

- AUG less than optimum.
- Decreased perfusion pressure and volume to coronary arteries.

**Early Deflation**

ASYS = SYS. Violates Rule 3 for deflation. May see “U” shape at ADIA.

- No afterload reduction.

**Late Deflation**

ADIA > DIA. Violates Rule 2 for deflation.

- Increased workload of left ventricle.
- Increased MVO₂.

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**Abbr**

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