DETERMINATION OF FLUID STATUS

Fluid Bolus and Hemodynamic Response

Baseline:
Semi-Recumbent position
Obtain 3 min of monitoring for average baseline SVI
If the last three SVI readings are stable, the PLR Test can be operated from the Challenge stage

Challenge:
Leg Raise
Obtain 3 min of monitoring for SVI peak value
Use a wedge cushion for ease of use and standardization

Frank-Starling curve

17.1%
PLR

Fluid
Responsive
Not Fluid
Responsive

Menu >> Protocol >> PLR Test

Interpretation:
Fluid Responsive
∆SVI ≥ 10%
Fluid Responsive: SVI & organ perfusion will likely increase in response to IV fluids
A positive test suggests that the patient is on the ascending limb of the Frank-Starling curve

Interpretation:
Not Fluid Responsive
∆SVI < 10%
Not Fluid Responsive: SVI will remain flat or hardly increase in response to IV fluids
A negative test suggests that the patient is on the flat limb of the Frank-Starling curve

Menu >> Protocol >> Bolus Test

Start the Bolus/ Drug Infusion

• Activate the Bolus Test function of the CHEETAH monitor.
• Administer a 3 mL/kg IV Bolus over 5 minutes
For optimal results ensure stable hemodynamics for 2 min prior to the bolus

Bolus Test Results

• At the end of the bolus challenge, stop the Bolus Test
• Note the peak change in the Wizard Report

Interpretation:
Fluid Responsive
∆SVI ≥ 10%
A positive test suggests that the patient is on the ascending limb of the Frank-Starling curve

Interpretation:
Not Fluid Responsive
∆SVI < 10%
A negative test suggests that the patient is on the flat limb of the Frank-Starling curve

CHEETAH Sensors should be replaced with a new set of sensors after 48 hours of use. Remember to perform a re-calibration after sensor replacement and once daily.

Cardiac Output (CO)
Cardiac Index (CI)
Stroke Volume (SV)
Stroke Volume Index (SVI)
\[\Delta \text{SVI}\]
Mean Arterial Pressure (MAP)
Total Peripheral Resistance (TPR)
Total Peripheral Resistance Index (TPRI)

HR x SV // one. zero. zero. zero. CO // BSA // HR x // one. zero. zero. zero. CO // BSA

SV // BSA

\[\Delta \text{SVI} \text{ of } \text{two. five. zero. ml} \text{ over } \text{three. to } \text{five. minutes}\]

Diuretics, Nitrates, Cardiac inotropes
IV Fluids, Antibiotics, Pressors
IV Fluids

\[\text{An alternative method to check for fluid responsiveness is a normal saline fluid bolus.}\]

Normal Hemodynamic Parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Normal Values</th>
<th>Patient 1</th>
<th>Patient 2</th>
<th>Patient 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>SVI</td>
<td>SVI &gt; 10%</td>
<td>800-1200 mmHg</td>
<td>10-15</td>
<td>70-105 mmHg</td>
</tr>
<tr>
<td>[\text{70-150 mmHg} ]</td>
<td>[\text{ \text{70-150 mmHg} ]</td>
<td>[\text{ \text{70-150 mmHg} ]</td>
<td>[\text{ \text{70-150 mmHg} ]</td>
<td></td>
</tr>
<tr>
<td>[\text{70-150 mmHg} ]</td>
<td>[\text{ \text{70-150 mmHg} ]</td>
<td>[\text{ \text{70-150 mmHg} ]</td>
<td>[\text{ \text{70-150 mmHg} ]</td>
<td></td>
</tr>
<tr>
<td>TPR</td>
<td>TPR &gt; 10%</td>
<td>80 x MAP/CO</td>
<td>80 x MAP/CO</td>
<td>80 x MAP/CO</td>
</tr>
<tr>
<td>HR</td>
<td>HR &gt; 90</td>
<td>60-100 beats/minute</td>
<td>60-100 beats/minute</td>
<td>60-100 beats/minute</td>
</tr>
<tr>
<td>SV</td>
<td>SV &gt; 5.4</td>
<td>2.4-10 l/m²</td>
<td>2.4-10 l/m²</td>
<td>2.4-10 l/m²</td>
</tr>
<tr>
<td>CO</td>
<td>CO &gt; 1000</td>
<td>CO x 1000</td>
<td>CO x 1000</td>
<td>CO x 1000</td>
</tr>
<tr>
<td>BSA</td>
<td>BSA &gt; 0.8</td>
<td>BSA x 1000</td>
<td>BSA x 1000</td>
<td>BSA x 1000</td>
</tr>
</tbody>
</table>

Contact Us: Cheeta Medical, Inc. 600 SE Maritime Ave Suite 220 Vancouver, WA 98661 USA
Toll Free: (+1) 866-751-9097
Tel: (+1) 360-828-8685
Fax: (+1) 360-718-8154
Email: cheeta-us@cheetah-medical.com
www.cheetahmedical.com

Disclaimer: This document and all content in it are for general information purposes only and are not intended to be specific medical advice, medical opinion, diagnosis or treatment as applied to any particular patient’s condition or situation. Please do not rely on this document or its content as a substitute for the expertise and professional judgment of a physician, pharmacist, nurse, or other healthcare professional.