Focus Assessed Transthoracic Echo (FATE)

Scanning through position 1-4 in the most favourable sequence

**Basic FATE views**

**Pos 1:** Subcostal 4-chamber

**Pos 2:** Apical 4-chamber

**Pos 3:** Parasternal long axis

**Pos 3:** Parasternal LV short axis

**Pos 4:** Pleural scanning

- **Point right** (patient’s left)
- **Point left** (patient’s right shoulder)
- **Point cranial**

**Disclaimer:** The authors do not assume any responsibility for the use of this FATE card.
Focus Assessed Transthoracic Echo (FATE)

1. Look for obvious pathology
2. Assess wall thickness + chamber dimensions
3. Assess bi-ventricular function
4. Image pleura on both sides
5. Relate the information to the clinical context
6. Apply additional ultrasound

**Dimensions and contractility:**

\[
FS = \frac{(LVDd - LVSd)}{LVDd}
\]

\[EF \approx 2 \times FS\]

- RV-wall \(\sim 5\) mm
- RV \(2.0-3.0\) cm
- IVS \(6-10\) mm
- LV \(\text{LVDd 3.5-5.5 cm, LVSd 2.0-4.0 cm}\)
- PW \(6-10\) mm

**The global function of the heart is determined by the interaction between:**

<table>
<thead>
<tr>
<th>Right ventricle</th>
<th>Left Ventricle</th>
</tr>
</thead>
<tbody>
<tr>
<td>Systole:</td>
<td>Systole:</td>
</tr>
<tr>
<td>Preload</td>
<td>Compliance</td>
</tr>
<tr>
<td>Afterload</td>
<td>Relaxation</td>
</tr>
<tr>
<td>Contractility</td>
<td>Heart rate</td>
</tr>
<tr>
<td>Heart rate</td>
<td></td>
</tr>
<tr>
<td>Diastole:</td>
<td>Diastole:</td>
</tr>
</tbody>
</table>

Hemodynamic instability, perform a systematic evaluation of these determinants plus concomitant pathology;
(e.g. pericardial effusion, pulmonary embolus, pleural effusion, pneumothorax, valvulopathy, dissection, defects)
PATHOLOGY TO BE CONSIDERED IN PARTICULAR:

- Post OP cardiac surgery, following cardiac catheterisation, trauma, renal failure, infection.
- Pulmonary embolus, RV infarction, pulmonary hypertension, volume overload.
- Ischemic heart disease, dilated cardiomyopathy, sepsis, volume overload, aorta insufficiency.
- Aorta stenosis, arterial hypertension, LV outflow tract obstruction, hypertrophic cardiomyopathy, myocardial deposit diseases.
Extended FATE views

- **Pos 1: Subcostal Vena Cava**
- **Pos 2: Apical 2 - Chamber**
- **Pos 2: Apical Long - axis**
- **Pos 2: Apical 5 - Chamber**
- **Pos 3: Parasternal short axis mitral plane**
- **Pos 3: Parasternal aorta short axis**

**CW:** Peak pressure: $V^2 \times 4$; $AO < 2$ m/s; $PA < 1$ m/s; $TI < 2.5$ m/s

**PW:** Mitral Inflow desc. time 140 - 240 ms; MAX $E < 1.2$ m/s; $E/A > 1$ (Age dependent)

**TVI:** $E/e' < 8-10$; $IVC < 20$ mm; 50% collaps during inspiration is normal

**Systolic Ventricular Function**

<table>
<thead>
<tr>
<th>Ventricle</th>
<th>M-Mode</th>
<th>Normal</th>
<th>Mild</th>
<th>Moderately</th>
<th>Severely</th>
</tr>
</thead>
<tbody>
<tr>
<td>LV</td>
<td>Pos 3, PS long</td>
<td>EF (%)</td>
<td>≥ 55</td>
<td>45 - 54</td>
<td>30 - 44</td>
</tr>
<tr>
<td>LV</td>
<td>Pos 3, PS long</td>
<td>FS (%)</td>
<td>≥ 25</td>
<td>20 - 24</td>
<td>15 - 19</td>
</tr>
<tr>
<td>LV</td>
<td>Pos 3, PS long</td>
<td>MSS (mm)</td>
<td>&lt; 10</td>
<td>7 - 12</td>
<td>13 - 24</td>
</tr>
<tr>
<td>LV</td>
<td>Pos 2, AP 4ch</td>
<td>Mapse (mm)</td>
<td>≥ 11</td>
<td>9 - 10</td>
<td>6 - 8</td>
</tr>
<tr>
<td>RV</td>
<td>Pos 2, AP 4ch</td>
<td>Tapse (mm)</td>
<td>16 - 20</td>
<td>11 - 15</td>
<td>6 - 10</td>
</tr>
</tbody>
</table>

Right and left ventricle Eye Balling use all views

For additional information: www.usabacd.org