

## INTRA-ABDOMINAL PRESSURE MEASUREMENT - ICU

- PURPOSE:** To outline the management of the patient requiring intra-abdominal pressure measurement.
- SUPPORTIVE DATA:** Normal intra-abdominal pressure (IAP) is 0 to sub-atmospheric. Conditions such as postoperative abdominal bleeding, pelvic and/or abdominal hemorrhage, and ascites are conditions/treatments that may elevate IAP. Intra-abdominal hypertension is defined as an IAP greater than 20 cm H<sub>2</sub>O or 15 mmHg and may adversely affect cardiovascular, pulmonary, and renal function. Cardiovascular effects include decreased cardiac output/index (CO/CI) and increased systemic vascular resistance/index (SVR/SVRI). Pulmonary effects include decreased compliance accompanied by increased peak inspiratory pressure (PIP). Renal problems include decreased glomerular filtration rate with possible oliguria and subsequent acute renal failure (NOTE: It is common for patients with multiple abdominal and/or pelvic trauma to have initial IAPs greater than 20 cm H<sub>2</sub>O or 15mmHg. In these cases, trends in IAPs are monitored to determine adverse cardiovascular, pulmonary, and renal effects).
- ASSESSMENT:**
1. Assess the following a minimum of every 2 hours:
    - Vital Signs (VS)
    - Pain score
    - Urine output (UO)
    - Oxygen saturation
    - Peak Inspiratory Pressure (PIP) if intubated
  2. Assess the following every 4 hours:
    - Abdomen: appearance, dressing, and for distention
    - Signs of adverse effects of increased IAP:
      - Rising PIP
      - Hypotension
      - Decreased UO
      - Worsening arterial blood gases when drawn
      - Decreased oxygen saturation
  3. Assess hemodynamic parameters and full line of data as per Unit Structure Standards or as ordered (patients with pulmonary artery catheter only).
- REPORTABLE CONDITIONS:**
4. Notify the provider for:
    - IAP greater than 20 cm H<sub>2</sub>O / 15 mmHg or increasing from baseline by 5-10 cm H<sub>2</sub>O / 3-7 mmHg
    - Rising PIP
    - Decreased CO/CI, hypotension, tachycardia, decreased UO
    - Elevated pulmonary artery systolic/pulmonary artery diastolic, pulmonary artery wedge pressure, right atrial pressure, and SVR/SVRI
- PATIENT/FAMILY TEACHING:**
5. Instruct on the following:
    - Purpose of IAP measurement
    - Need for frequent monitoring
- ADDITIONAL STANDARDS:**
6. Implement the following as indicated:
    - Arterial Line - ICU
    - Artificial Airway - ICU
    - Indwelling Bladder Catheter
    - Mechanical Ventilation - ICU
    - Pulmonary Artery Catheter - ICU
- DOCUMENTATION:**
7. Document in accordance with documentation standards.

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