### PURPOSE

- Intraabdominal pressure (IAP) measurements are indicated in patients who are at risk for developing abdominal compartment syndrome.
- Most simple and effective method of determining intraabdominal pressure is by measurement of bladder pressure.
- To assist in determining abdominal perfusion pressure (APP). \( \text{APP} = \text{MAP} - \text{IAP} \). It is recommended that APP remains ≥ 60 mmHg in presence of intraabdominal hypertension or abdominal compartment syndrome.

### NURSING ALERT:

- Intraabdominal pressure is normally zero or subatmospheric.
- Intraabdominal pressures of ≥ 12 mmHg indicate onset of intraabdominal hypertension.
- Intraabdominal pressures of ≥ 20 mmHg that is associated with new organ dysfunction / failure indicate presence of abdominal compartment syndrome.
- Bladder pressure measurements increase risk of urinary tract infections and therefore strict aseptic technique must be maintained while performing this procedure. The AbViser™ AutoValve™ system is to remain in-line with foley catheter for duration of use.

### EQUIPMENT

1. Indwelling urinary catheter with urinary drainage bag
2. AbViser™ AutoValve™ Intra-abdominal pressure monitoring system
3. 500 mL bag NS
4. Bedside monitor pressure module and cable
5. Alcohol swabs
6. Appropriate personal protective equipment
7. Tape
8. Clamp
PROCEDURE

A. Preparing Patient and Bedside Monitor

1. Obtain an order from physician to initiate IAP monitoring.
2. Explain procedure to patient.
3. Wash your hands.
4. Don appropriate personal protective equipment.
5. Insert pressure module into bedside monitor.
6. Attach monitoring cable into pressure module.

   **NOTE:** Any unused transducer port on multi-measurement server may be used.
7. Select a 30 mmHg scale on monitor.

B. Preparing Pressure System

1. Prime AbViser™ AutoValve™ pressure transducer system utilizing the 500 mL bag NS.

   **NOTE:** Do not use a pressurized bag.
   1.1 Aspirate saline with syringe then pump syringe to prime infusion tubing until fluid visibly runs through valve of device ensuring all air is removed.
2. Connect AbViser™ AutoValve™ device to catheter using aseptic technique.
   2.1 Place sterile drape under connection of catheter and drain tubing. Clamp catheter.
   2.2 Clean connection vigorously with alcohol swabs.
   2.3 Separate catheter from drain tubing.
   2.4 Attach AbViser™ AutoValve™ by pushing urinary catheter over barbed connector and attaching drain tubing over other end.
   2.5 Apply strip of blue tape provided with device around end of catheter to ensure snugly attached.
   2.6 Unclamp catheter.

   **NOTE:** Refer to Appendix A for picture of same.
3. Connect pressure transducer system to pressure module of monitoring system with transducer cable.
4. Place transducer where midaxillary line and iliac crest intersect. Secure transducer to patient with tape.
NOTE: Iliac crest approximates level of bladder and should be used as a reference point.

NOTE: If patient cannot tolerate supine position, place transducer at level of bladder.

5. Zero pressure monitoring system.

C. Obtaining a Bladder / Intraabdominal Pressure (IAP) Measurement

1. Position patient supine.

2. Fill syringe with 20 mL of fluid by pulling back on plunger.

3. Inject 20 ml of saline briskly into bladder within 10 seconds.

   NOTE: This will inflate valve, closing off connection between urinary catheter and drain tubing allowing for a pressure reading.

4. Measure intraabdominal/bladder pressure at end expiration once system has stabilized.

   NOTE: Measuring at end expiration minimizes effects of pulmonary pressures.

   NOTE: Due to bladder detrusor muscle contraction, it may take 10 – 60 seconds for saline solution to stabilize and bladder detrusor muscle to relax in order to monitor at a steady state.

   NOTE: Valve will automatically open in 1-3 minutes allowing fluid to pass into drainage tubing.

   NURSING ALERT:
   • AbViser™ AutoValve™ device is to remain in line until device is no longer required for further measurement.

5. Document intraabdominal pressure on patient’s flowsheet.

   NOTE: If patient unable to tolerate supine position, degree of HOB elevation should be documented with bladder pressure to ensure proper trending of pressures.

6. Subtract 20 mL of instilled saline from hourly urine output.

7. Report IAP measurements to physician, as per patient care orders.

8. Confirm that valve has opened and is draining normally.
REFERENCES


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APPENDIX A

Bladder Pressure Monitoring Set-up

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