Medical management consists of five interventions:

1. Evacuate intraluminal contents
2. Maintain abdominal wall compliance
3. Optimize fluid administration
4. Optimize systemic / regional perfusion
5. Evacuate extraluminal contents

If there is no response to a particular intervention, therapy should be escalated to the next step in the algorithm.

**TECHNOLOGY TRAPS**

Available kits can provide standardized equipment and improve accuracy. Bladder-pressure monitoring using a closed system does not increase the risk of urinary tract infection.

However, many ICUs use homemade systems. These systems vary with the institution, but can consist of clamping the existing Foley drain port, connecting the sampling port to a transducer through a stopcock, injecting saline through the Foley sampling port to fill the bladder, and then measuring the bladder pressure. There are many problems with this approach. The necessity of gathering multiple pieces of equipment may delay or inhibit the implementation of bladder pressure monitoring, thus causing IAH to go unrecognized. There is no standard or quality control for this method, and trending data is not possible. An under- or overfilled bladder may result in incorrect readings, as can inter-user variability. ICU managers and directors using homemade systems should undertake quality control measures to ensure accuracy, or consider using commercially available kits already tested for accuracy and safety.

In addition to equipment and user-related errors, several patient-related issues require attention. Thoracic and abdominal wall muscular activity may cause erroneous readings. Respiratory effort that is asynchronous with the ventilator, coughing or patient movement may affect readings. Abdominal binders or muscular guarding may falsely elevate IAP. Variations in patient position such as Trendelenburg, reverse Trendelenburg, or elevation of head of bed may affect results as well. In some cases, heavy sedation or even temporary neuromuscular blockade may be necessary for accurate readings.

**IAH / ACS MEDICAL MANAGEMENT ALGORITHM**

- The choice (and success) of the medical management strategies listed below is strongly related to both the etiology of the patient’s IAH / ACS and the patient’s clinical situation. The appropriateness of each intervention should always be considered prior to implementing these interventions in any individual patient.
- The interventions should be applied in a stepwise fashion until the patient’s intra-abdominal pressure (IAP) decreases.
- If there is no response to a particular intervention, therapy should be escalated to the next step in the algorithm.

**Step 1**
- Evacuate intraluminal contents
- Insert nasogastric and/or rectal tube
- Initiate gastrointestinal prokinetic agents
- Abdominal ultrasonography to identify lesions
- Remove constrictive dressings, abdominal eschars
- Aim for zero to negative fluid balance by day 3
- Maintain abdominal perfusion pressure (APP) > 60 mmHg

**Step 2**
- Administer enemas
- Percutaneous catheter drainage
- Consider reverse Trendelenburg position
- Fluid removal through judicious diuresis once stable
- Hemodynamic monitoring to guide resuscitation
- Make sure patient is appropriately sedated or even temporary neuromuscular blockade may be necessary

**Step 3**
- Consider colonoscopic decompression
- Consider surgical evacuation of lesions
- Consider neumuscular blockade
- Consider hemodialysis / ultrafiltration
- Vasoactive medications to keep APP > 60 mmHg

**Step 4**
- If IAP > 25 mmHg (and/or APP < 50 mmHg) and new organ dysfunction / failure is present, patient’s IAH / ACS is refractory to medical management. Strongly consider surgical abdominal decompression.

**Measurements**
- Bladder pressure has been shown to be an accurate form of intra-abdominal pressure measurement. Commercially available kits can provide standardized equipment and improve accuracy. Bladder-pressure monitoring using a closed system does not increase the risk of urinary tract infection.

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