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# Abdominal Compartment Syndrome: The Contributing Role of Pharmacists and Nursing

**[1]-Walaa Abdu Yahya Alaag,[2]-Mousa Mohammed Talbi Mutton,[3]-Faisal Saud Mahanna Al-Anazi,[4]-Zohoor Jaber Ali Hakami,[5]-Fatima Mofareh Ibrahim Almanjihi ,[6]-Sultan Ali Al Sahli,[7]-Ibrahim Abdulaziz S Alarfaj,[8]- Sharifah Hassan Hazazi ,[9]-Qoot Naif Ayad Alotibi,[10]- Amjad Miqad Alotaibi**

[1] Ksa, Ministry Of Health, Baish General Hospital
[2] Ksa, Ministry Of Health, Baish General Hospital
[3] Ksa, Ministry Of Health, Mental Health And Will Complex In Riyadh
[4] Ksa, Ministry Of Health, Hospital Prince Mohmmed Bin Nasser
[5] Ksa, Ministry Of Health, Baish General Hospital Intensive Care Department
[6] Ksa, Ministry Of Health, Ruwaydah General Hospital
[7] Ksa, Ministry Of Health, King Khalid Hospital In Al Majmaah
[8] Ksa, Ministry Of Health, Atika Health Center
[9] Ksa, Ministry Of Health, Rawidat Al-Ared General Hospital
[10]Ksa, Ministry Of Health, King Saud Medical City

**Abstract:**

**Background**: Abdominal Compartment Syndrome (ACS) is a critical condition caused by increased intra-abdominal pressure (IAP), which compromises organ perfusion and can lead to multi-organ failure if left untreated. It is particularly prevalent among critically ill patients, and its early recognition and management are crucial to patient survival. Despite advances in diagnosis and management, ACS remains underdiagnosed, and a gap in care exists regarding the involvement of pharmacists and nursing staff in its management.

**Aim**: This article aims to explore the contributing role of pharmacists and nursing professionals in the management of ACS, emphasizing collaborative care, early identification, and timely intervention to mitigate the severe consequences of the syndrome.

**Methods**: A review of existing literature, clinical guidelines, and case studies was conducted to evaluate the current role of pharmacists and nurses in ACS management. Key aspects such as monitoring, early diagnosis, pharmacologic interventions, and patient care strategies were examined.

**Results**: Pharmacists contribute by optimizing medication management, particularly in managing fluid balance and ensuring appropriate drug dosing for critically ill patients. Nurses are crucial in monitoring patients for signs of ACS and intra-abdominal hypertension (IAH), implementing early interventions, and providing continuous patient care. Both healthcare professionals work together to ensure timely recognition and appropriate management to prevent the progression of ACS.

**Conclusion**: Early detection and collaborative care involving pharmacists and nursing staff are essential in preventing ACS-related complications. The management of ACS requires interdisciplinary teamwork to ensure optimal patient outcomes, and the involvement of healthcare professionals beyond the physicians, particularly pharmacists and nurses, is critical in improving care quality.

**Keywords**: Abdominal Compartment Syndrome, ACS, Pharmacists, Nursing, Intra-abdominal Pressure, Critical Care, Collaborative Care

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**Introduction:**

Compartment syndrome is a condition that can manifest in any anatomical region characterized by elevated pressure within a confined body space, ultimately impairing blood flow, inducing cellular injury, and leading to the dysfunction of organs. This condition arises due to the restrictive nature of anatomical compartments bounded by muscles and fascia, which limits their ability to expand under increased pressure. Abdominal compartment syndrome (ACS) has garnered significant attention in clinical practice due to its prevalence among critically ill patients, where it can lead to multisystem organ failure if not promptly recognized and managed [1][2][3]. The increased pressure within these confined spaces results in a pathological cascade that compromises the perfusion of tissues, making it a critical condition in intensive care settings. The World Society of Abdominal Compartment Syndrome (WSACS), founded in 2004, has played a pivotal role in establishing standardized definitions, guidelines, and protocols for diagnosing and treating ACS. Despite this, ACS remains frequently underdiagnosed in clinical practice [4][5]. The intra-abdominal pressure (IAP) is a crucial parameter in the evaluation of ACS, with normal IAP in adults ranging from 0 to 5 mm Hg, while critically ill patients may experience IAP levels of 5 to 7 mm Hg. Any elevation in IAP beyond 12 mm Hg is classified as intra-abdominal hypertension (IAH), which is not synonymous with ACS but may precede its onset. ACS is clinically defined when the IAP exceeds 20 mm Hg, although organ dysfunction can begin even before this threshold is reached [4][5]. If left unrecognized and untreated, ACS can lead to severe outcomes, including organ failure and death, thus making early detection and immediate intervention essential for improving patient outcomes.

**Etiology of Abdominal Compartment Syndrome (ACS)**

The pathophysiology of abdominal compartment syndrome is primarily influenced by the elasticity and compliance of the abdominal wall and diaphragm. When IAP rises, it can cause significant vascular dysfunction, including a loss of vasomotor tone and disruption of endothelial cell junctions, which compromises the integrity of blood vessels. Additionally, elevated IAP triggers the release of antidiuretic hormone, further exacerbating fluid retention and contributing to the development of intra-abdominal hypertension (IAH) [8]. The WSACS recommends categorizing IAH into four distinct grades based on the magnitude of IAP: Grade I (12-15 mm Hg), Grade II (16-20 mm Hg), Grade III (21-25 mm Hg), and Grade IV (greater than 25 mm Hg) [5]. The presence of organ dysfunction in conjunction with IAH strongly suggests ACS, highlighting the urgency for timely intervention. Certain surgical procedures, such as liver transplantation, damage control surgery, and large abdominal hernia repairs, are recognized as high-risk procedures for the development of IAH [9]. Moreover, ACS can be classified into primary and secondary types, based on its origin. Primary causes include blunt or penetrating trauma, intra-abdominal hemorrhage, abdominal aortic aneurysm rupture, and intra-abdominal infections. Secondary causes of ACS are those that do not originate from within the abdomen, such as pregnancy, ascites, ileus, and large-volume fluid resuscitation. Conditions like cirrhosis, obesity, and peritoneal dialysis also predispose patients to elevated IAP, with individuals having a higher body mass index (BMI) tending to exhibit higher baseline IAP values, ranging from 9 to 14 mm Hg [6][11][12][13][14]. Understanding the underlying causes and risk factors for ACS is essential for clinicians to identify and manage this life-threatening condition effectively.

**Epidemiology and Impact of Abdominal Compartment Syndrome**

Abdominal compartment syndrome is a significant concern in critical care settings, affecting a large proportion of patients in intensive care units (ICUs). A prospective study titled "Incidence, Risk Factors, and Outcomes of Intra-Abdominal Hypertension in Critically Ill Patients" (IROI Study) found that 34% of patients exhibited IAH on the day of admission, with this figure rising to 48.9% within 14 days. The development of IAH during this period was strongly associated with increased mortality [18]. Similarly, in a cohort of ICU patients, 32% of individuals were found to have IAH, with 4% of these patients progressing to develop ACS [19]. These findings underscore the prevalence of IAH and ACS in critically ill populations and highlight the importance of vigilant monitoring for early detection of elevated IAP, which can directly

impact patient survival. The association between the development of IAH and poor clinical outcomes emphasizes the need for prompt intervention to prevent the progression to ACS, which can lead to severe organ dysfunction, systemic inflammatory response, and ultimately, death if not managed appropriately. The frequency of ACS and its relationship with other conditions in ICU patients necessitate a proactive approach to diagnosing and managing this syndrome to optimize patient care and improve survival rates in critical care settings.

**Pathophysiology of Abdominal Compartment Syndrome (ACS)**

Elevated intra-abdominal pressure (IAP) is a key factor in the pathophysiology of ACS, leading to widespread dysfunction across multiple organ systems. The cardiovascular system is one of the first to be affected by IAH. Increased pressure within the abdomen compresses the inferior vena cava, reducing venous return to the heart, which results in lower extremity edema and a decrease in cardiac output. This reduction in blood flow diminishes oxygen delivery to peripheral tissues, exacerbating the risk of organ failure. In addition, the upward displacement of the diaphragm due to increased IAP raises intra-thoracic pressures, further impairing cardiac function and decreasing ventricular compliance. The pulmonary system is similarly impacted by elevated IAP, as increased intrathoracic pressures limit pulmonary compliance, reducing tidal volume and functional residual capacity. This leads to increased pulmonary vascular resistance and difficulty in ventilation. The alveoli may collapse, increasing dead space and impairing gas exchange, resulting in hypoxemia and hypercarbia. The renal system is also compromised by IAH, as reduced blood flow to the kidneys decreases the glomerular filtration rate, potentially leading to acute kidney injury. The activation of the renin-angiotensin-aldosterone system further exacerbates fluid retention, increasing systemic vascular resistance and worsening renal dysfunction. In the gastrointestinal system, decreased abdominal compliance results in reduced splanchnic blood flow, leading to hypoxia, increased capillary permeability, and edema. This sets the stage for inflammation, malperfusion, bacterial translocation, and the risk of sepsis. The hepatic system suffers as well, as impaired hepatic blood flow results in metabolic acidosis and reduced clearance of toxins. The nervous system is significantly impacted by increased IAP, as it leads to impaired venous drainage from the brain, raising intracranial pressure and reducing cerebral blood flow. Elevated $PaCO_2$ levels further contribute to increased blood flow to the brain, exacerbating intracranial pressure and increasing the risk of cerebral injury [10][21][22]. These systemic effects underscore the critical nature of ACS and its ability to affect multiple organ systems, making early diagnosis and intervention crucial for patient survival.

**History and Physical**

Abdominal compartment syndrome (ACS) is predominantly observed in critically ill patients, and its diagnosis is more common in intensive care units (ICUs) than in emergency departments. Notably, physical examination alone is not a reliable diagnostic tool for ACS, even when conducted by skilled clinicians, necessitating the use of objective measurements in patients with risk factors for intra-abdominal hypertension (IAH) [9][23]. If a patient has sustained penetrating abdominal trauma, received significant fluid resuscitation, or undergone extensive abdominal surgery, ACS should be suspected. Diagnosing ACS in ICU patients can be challenging as they often exhibit multiple organ failures beyond the abdominal region. Moreover, patients may be intubated and unable to communicate symptoms, making it crucial to closely monitor intra-abdominal pressure (IAP), review medical histories, and consider the overall clinical picture for accurate diagnosis [9].

**Evaluation**

Imaging modalities, while not universally used for diagnosing ACS, can reveal early signs of IAH that may progress to ACS, such as a peritoneal-to-abdominal height ratio greater than 0.52, an anteroposterior-to-transverse abdominal diameter ratio exceeding 0.8, bowel wall thickening, diaphragm elevation, narrowing of the vena cava to less than 3 mm, and the presence of significant intra-abdominal fluid [9]. The most accurate method for confirming ACS is the measurement of IAP, which should be monitored whenever there is an identified risk of IAH. IAP can be measured using both direct and indirect methods. Direct

measurement involves the use of pressure transducers, such as Veress needles during laparoscopic surgery, or intraperitoneal catheters, such as those used for peritoneal dialysis. While these methods are highly precise, they are invasive.

Indirect measurement through intravesicular catheter pressures is more commonly used due to its practicality, availability, and minimal invasiveness. The procedure involves aseptically clamping a Foley catheter, connecting it to a three-way stopcock adjusted to the mid-axillary line at the iliac crest to zero the transducer, and injecting 25 cc of sterile saline into the bladder. Measurements are typically taken at end-expiration with the patient positioned supine [5][14]. Bladder pressures under 5 mm Hg are normal in healthy individuals, while pressures between 10 and 15 mm Hg are typical after abdominal surgery or in obese patients. Pressures exceeding 25 mm Hg are strongly suggestive of ACS and should be clinically correlated. It is advised that IAP measurements be taken every 6 hours to monitor for the worsening of IAH and potential ACS development. However, contraindications for bladder pressure measurement include bladder trauma, neurogenic bladder, benign prostatic hypertrophy, and pelvic hematoma [24][25]. If bladder pressure measurement is unavailable, alternative methods such as measuring inferior vena cava (IVC) pressure through a central line, manometry through a Jackson-Pratt drain, or intragastric pressure measurement via a nasogastric tube can be employed, though these methods are not widely validated or commonly utilized [23].

**Treatment / Management**

The selection of appropriate intervention and its timing is determined by factors such as the etiology of elevated IAP, the duration of increased pressure, and the degree of organ dysfunction. Not all patients with ACS require immediate surgical decompression, as nonsurgical interventions can reduce intra-abdominal volume and subsequently improve IAP. When clinically appropriate, intraluminal volume can be decreased via nasogastric decompression, rectal tube decompression, or endoscopic decompression. In cases of ascites or hematoma, percutaneous drainage can help reduce extraluminal volume [5][20][23]. Additionally, improving abdominal wall compliance through adequate sedation, neuromuscular blockade, removal of constrictive dressings, or eschar release may be beneficial. The World Society of Abdominal Compartment Syndrome (WSACS) recommends optimizing fluid administration, resuscitating with hypertonic solutions or colloids, and considering hemodialysis or ultrafiltration as part of goal-directed resuscitation [5]. However, the evidence supporting these conservative measures is of low quality and should be carefully considered [14].

Percutaneous catheter drainage offers a less invasive alternative to laparotomy for ACS caused by excessive extraluminal abdominal volume, including air, fluid, or blood accumulation in the abdominal cavity. If conservative management fails to improve IAH and organ function continues to deteriorate, surgical decompression through emergent laparotomy may be indicated [2][26]. This procedure can lead to rapid improvement in organ dysfunction, as most dysfunction arises from compromised blood flow or mechanical obstruction [27][28]. After surgical decompression, the abdominal fascia may be temporarily left open and covered with a negative pressure dressing to minimize the risks of infection, fluid loss, and fascia retraction. Subsequent evaluation and closure of the fascia can occur after clinical improvement, using techniques such as mesh or primary closure [6][9]. However, some institutions may face challenges due to limited resources [29].

Despite being considered a definitive treatment, surgical decompression carries the risk of complications, especially when the abdominal wall remains open. Potential complications include fistula formation, protein loss through peritoneal fluid drainage, abdominal wall retraction leading to ventral hernia, and wound infections. Additionally, up to 20% of surgical decompressions may result in recurrent ACS, either due to ongoing causes or insufficient reduction in IAP [23]. Although extensive literature exists on ACS, the optimal timing for surgical decompression remains a subject of debate. Early surgical intervention may exacerbate patient stress, leading to a general consensus that surgery should be considered only after multiple conservative measures have failed to improve the patient's condition [7].

**Differential Diagnosis**

Abdominal compartment syndrome (ACS) must be carefully differentiated from a range of conditions that present with similar clinical manifestations, including mesenteric ischemia, ruptured abdominal aortic aneurysm, toxic megacolon, acute appendicitis, and acute diverticulitis. Mesenteric ischemia is a condition characterized by reduced blood flow to the intestines, which can present severe abdominal pain and bowel dysfunction, similar to ACS. However, mesenteric ischemia is primarily driven by vascular compromise, whereas ACS results from elevated intra-abdominal pressure. A ruptured abdominal aortic aneurysm can also lead to abdominal pain, hypotension, and shock, often mimicking ACS, though it involves hemorrhagic shock rather than increased intra-abdominal pressure. Toxic megacolon, typically seen in patients with inflammatory bowel disease or infectious colitis, presents abdominal distention, pain, and systemic signs of toxicity, but unlike ACS, it does not involve intra-abdominal pressure changes. Acute appendicitis may also be present with abdominal pain, nausea, and vomiting, and while it may cause increased intra-abdominal pressure, it is more localized and less severe than ACS. Similarly, acute diverticulitis can cause significant abdominal pain, often in the lower left quadrant, and may lead to systemic signs of infection or sepsis, but the underlying pathophysiology differs from that of ACS, which is primarily a result of elevated IAP and organ dysfunction. Accurate diagnosis requires a comprehensive assessment, including imaging studies and clinical evaluation, to differentiate ACS from these other potentially life-threatening conditions.

**Prognosis**

The prognosis for patients with abdominal compartment syndrome (ACS) can be dire if left untreated, with delayed intervention leading to significantly higher mortality rates. Intra-abdominal hypertension (IAH), which precedes or accompanies ACS, has been identified as an independent predictor of mortality, with each increasing grade of IAH corresponding to progressively worse outcomes. The development of multiorgan failure as a result of sustained elevated intra-abdominal pressure can lead to prolonged recovery times, often extending for weeks or even months, despite appropriate medical intervention. Patients who suffer from ACS often require intensive medical management, including mechanical ventilation and dialysis, which complicate their recovery process. The need for extended hospital stays and ongoing support further exacerbates the challenges to patient recovery. Studies consistently report that the severity and extent of multiorgan failure are key determinants of the outcome, with patients experiencing prolonged ICU stays, invasive monitoring, and continued organ support. Even when ACS is diagnosed and treated promptly, the effects on multiple organ systems can lead to a significantly compromised recovery trajectory. Moreover, the long-term implications for these patients include the potential for long-term complications, such as respiratory dysfunction, renal failure, and impaired gastrointestinal function. These factors underscore the importance of early detection and timely intervention in improving the prognosis for patients with ACS, as the condition's progression without treatment remains associated with a markedly unfavorable outcome [9][19].

**Complications**

Abdominal compartment syndrome (ACS) is associated with a wide range of complications, which can severely impact the patient's health outcomes. Renal failure is one of the most common complications observed in patients with ACS, often due to compromised renal perfusion as a result of elevated intra-abdominal pressure (IAP). Bowel ischemia can also occur, leading to reduced blood flow to the intestines and subsequent tissue necrosis. Respiratory distress or failure is frequently noted in ACS patients due to impaired diaphragm movement and decreased pulmonary compliance caused by high IAP. In addition, increased cranial pressure can be a significant concern, as elevated IAP often leads to intracranial hypertension, further compromising patient stability. Cardiac failure may also arise, as the increased intra-abdominal pressure can result in decreased venous return to the heart, reducing cardiac output. If left unaddressed, ACS can progress to death, particularly in cases where organ failure is widespread, or treatment is delayed. The severity of these complications underscores the importance of timely diagnosis and intervention to mitigate the risks and improve the overall prognosis for patients suffering from ACS.

**Patient Education**

Preventing the development of ACS largely hinges on the early identification of risk factors and proactive management of intra-abdominal pressure. It is crucial to measure IAP in any patient who is at risk, especially those in the intensive care unit (ICU). Managing fluid balance is key in reducing the risk of ACS, and this includes the careful administration of intravenous fluids and blood products. Avoiding excessive positive fluid balance is essential, as overloading the body with fluids can contribute to increased IAP. Additionally, mechanical ventilation strategies should include the use of low tidal volumes, which can help prevent further elevation of IAP. To mitigate gastrointestinal complications, the use of intestinal prokinetic medications can reduce the risk of ileus or constipation, which may exacerbate intra-abdominal pressure. Moreover, minimizing enteral feeding during critical care phases can help reduce abdominal distention and alleviate IAP. These preventive measures, when applied in conjunction, can significantly decrease the incidence of ACS and enhance patient outcomes by addressing its underlying risk factors.

**Enhancing Healthcare Team Outcomes**

The effective diagnosis and management of ACS require a collaborative and interdisciplinary approach, as the condition can manifest subtly and is often missed if not closely monitored. It is particularly prevalent in medical and surgical ICUs, with studies indicating that intra-abdominal hypertension (IAH) occurs in approximately 30% to 40% of critically ill patients. A survey of specialists revealed that non-surgical specialists are generally less familiar with identifying and managing ACS compared to their surgical counterparts, highlighting the need for broader awareness and training. Routine monitoring of critically ill patients for ACS should be institutionalized, but such practices are often limited by resource constraints and a lack of understanding of the condition's severity. While outcomes for patients with ACS can be poor, particularly when multiple organ systems are involved, early diagnosis and treatment can improve prognosis significantly. Involvement of the appropriate specialties, such as general surgeons, is crucial in managing patients at high risk of ACS. Surgeons play a vital role in workup, management, and decision-making regarding the necessity for surgical intervention. Close monitoring in the ICU by intensivists who are familiar with ACS is critical, as they can make timely decisions to address complications that arise. Pharmacists contribute to the patient care process by optimizing pain management and sedation protocols, ensuring that appropriate medications are administered. Nurses play an integral role in monitoring vital signs, abdominal girth, wound care, and urine output, all of which provide valuable information regarding the patient's progression. Critical care teams also benefit from the expertise of nutritionists, physical and occupational therapists, and respiratory therapists, who contribute to the holistic management of ACS patients. For those requiring surgical intervention, recovery can be prolonged, necessitating long-term care and rehabilitation. This highlights the importance of a coordinated, multidisciplinary approach to the care of patients with ACS, which can significantly impact patient outcomes and overall recovery [30].

**Nursing Interventions:**

Nursing interventions for patients with abdominal compartment syndrome (ACS) are crucial in identifying the condition early and providing effective management to prevent further deterioration of the patient's condition. ACS is a potentially life-threatening complication that requires immediate recognition and intervention. As elevated intra-abdominal pressure (IAP) can compromise organ function, the nursing team plays a pivotal role in monitoring, maintaining, and supporting critical physiological parameters. Effective nursing care requires a multidisciplinary approach, involving regular assessments, vigilant monitoring, and active participation in both non-surgical and surgical management strategies.

One of the primary nursing interventions for patients at risk of ACS is the continuous and thorough monitoring of vital signs, particularly blood pressure, heart rate, respiratory rate, and oxygen saturation. Monitoring for signs of systemic compromise is essential, as increased IAP can lead to cardiovascular instability, respiratory distress, and renal dysfunction. Nurses are responsible for ensuring the timely detection of these physiological changes, which can be indicative of worsening intra-abdominal hypertension (IAH) and ACS. Regular assessment of urine output is another critical task, as reduced renal

perfusion and acute renal failure are common complications of ACS. Decreased urine output may signal deteriorating kidney function and necessitate further intervention, including adjustments in fluid management or initiation of renal replacement therapy if required. Additionally, nurses are responsible for measuring and monitoring intra-abdominal pressure (IAP) to detect early signs of ACS. Non-invasive methods, such as bladder pressure monitoring through a Foley catheter, are typically employed for this purpose. Nurses must ensure that IAP measurements are performed correctly, following the recommended procedures and at regular intervals, particularly in patients with risk factors for ACS, such as those with abdominal trauma, recent surgery, or significant fluid resuscitation. Accurate and timely IAP measurements can guide the clinical team in identifying ACS early and facilitating appropriate interventions. For patients undergoing invasive IAP measurement, such as those with peritoneal catheters or pressure transducers, nurses must ensure the maintenance of aseptic techniques and monitor for potential complications related to invasive procedures, including infection or catheter displacement.

Pain management is another essential aspect of nursing care for ACS patients. Elevated IAP can cause significant abdominal discomfort, and effective pain management is crucial for patient comfort and for preventing further complications related to inadequate pain control, such as increased blood pressure or respiratory distress. Nurses must collaborate with the healthcare team to administer appropriate analgesics and sedatives while ensuring the avoidance of medications that may adversely affect the patient's hemodynamic stability. Moreover, the nurse's role in assessing the patient's pain using validated pain scales, observing non-verbal cues in sedated or intubated patients, and adjusting the pain management plan as needed is critical. In addition to pain control, nurses should implement strategies to reduce the volume of intra-abdominal contents, especially in patients with ascites, bowel distention, or hematoma, which contribute to increased IAP. Non-surgical decompression techniques such as nasogastric tube insertion for gastric decompression, rectal tube placement for colonic decompression, and the use of prokinetic medications to promote bowel motility are often indicated. Nurses must ensure the correct placement of these devices, monitor their effectiveness, and assess for any signs of complications, such as displacement or obstruction. For patients with fluid overload contributing to ACS, such as those with ascites or significant blood loss, nurses are involved in the careful management of fluid resuscitation, including the administration of hypertonic solutions or colloids as part of the resuscitation efforts.

Nurses also play an essential role in managing the patient's position and ensuring adequate sedation to optimize abdominal wall compliance and minimize the adverse effects of elevated IAP. Positioning the patient in a supine position with proper alignment, using appropriate sedation and neuromuscular blockade, can help improve abdominal wall compliance, thereby reducing IAP and alleviating some of the stress on vital organs. The removal of constrictive dressings and the use of escharotomy in cases of severe abdominal compartment syndrome may also be necessary, and nurses must assist in the careful monitoring of such interventions to ensure optimal patient outcomes. As ACS is frequently associated with multiple organ dysfunction, nurses must monitor organ systems for signs of failure, particularly the cardiovascular, renal, and respiratory systems. If signs of organ failure develop, nurses must promptly alert the medical team for further assessment and intervention. In patients requiring invasive mechanical ventilation, it is vital for nurses to monitor ventilator settings and adjust them as necessary to accommodate the increased intrathoracic pressure and to optimize oxygenation. Similarly, for patients with renal dysfunction, nurses may be involved in facilitating renal replacement therapy such as hemodialysis or continuous renal replacement therapy (CRRT).

Moreover, when surgical intervention is required, nurses play an important role in preparing the patient for surgery and providing post-operative care. For patients undergoing abdominal decompression via laparotomy, postoperative monitoring is critical to detect potential complications such as infection, bleeding, or wound dehiscence. Nurses must assess the surgical site for signs of infection, ensure the proper management of drains, and monitor for any signs of new complications. Post-operatively, nurses must also monitor for signs of recurrent ACS, especially in patients who may have a temporary abdominal closure, as these patients are at high risk for wound complications or re-accumulation of intra-abdominal fluid. In summary, nursing interventions in ACS are multifaceted and demand constant vigilance, clinical expertise,

and a proactive approach to care. Nurses must be adept at recognizing the early signs of ACS, accurately measuring IAP, providing effective pain management, and collaborating with other healthcare professionals to implement non-surgical and surgical interventions. Through diligent monitoring, appropriate therapeutic interventions, and post-operative care, nurses can significantly influence the outcomes of patients with ACS, improving their chances for recovery and minimizing the risk of complications. A collaborative, team-based approach to ACS management, with nursing staff playing a central role, is essential for optimizing patient care and outcomes.

**Conclusion:**

Abdominal Compartment Syndrome (ACS) is a potentially life-threatening condition that requires timely identification and intervention to avoid catastrophic outcomes such as multi-organ failure and death. Although the primary focus of ACS management traditionally falls on physicians, the role of pharmacists and nursing staff has become increasingly important. Nurses play a vital role in early detection and continuous monitoring of intra-abdominal pressure (IAP) in critically ill patients, ensuring that changes in patient condition are promptly addressed. Their responsibility includes assessing risk factors, tracking changes in abdominal distension, and alerting the healthcare team if ACS is suspected. Nurses also participate in the administration of supportive therapies aimed at managing IAH, such as sedation, neuromuscular blockade, and fluid management strategies. Pharmacists contribute significantly by optimizing medication regimens, particularly in managing fluid balance, choosing the appropriate diuretics, and ensuring that medications used do not exacerbate IAH. Their expertise is also crucial in managing pain, sedation, and in preventing drug-induced complications. Pharmacists can assist in adjusting drug dosages based on the patient's evolving clinical condition, such as changes in renal or hepatic function due to ACS-induced organ dysfunction. Additionally, the pharmacist's ability to review drug interactions and contraindications in critically ill patients further enhances patient care. Both pharmacists and nurses are integral to the overall management plan for ACS. Their collaborative efforts can lead to early intervention and prevent the progression of ACS to more severe stages. Additionally, their roles in patient education, communication with other healthcare professionals, and implementation of evidence-based protocols further strengthen the care provided. The multidisciplinary approach, incorporating pharmacists and nursing staff, ensures comprehensive patient care and improves patient outcomes by reducing the risks associated with ACS. Given the complexity of ACS, ongoing research into the most effective treatment and intervention strategies is needed to refine care protocols and further integrate the roles of these healthcare professionals. Collaboration between pharmacists, nurses, and physicians should be a model for addressing other complex conditions in critical care.

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**متلازمة تجويف البطن: الدور المساهم للصيادلة والممرضين**

**الملخص:**

**الخلفية :**متلازمة تجويف البطن (ACS) هي حالة حرجة ناجمة عن زيادة الضغط داخل تجويف البطن(IAP) ، مما يضعف تدفق الدم للأعضاء ويمكن أن يؤدي إلى فشل متعدد للأعضاء إذا تُركت دون علاج. تنتشر بشكل خاص بين المرضى في حالات حرجة، ويعد التعرف المبكر والإدارة المناسبة لهذه الحالة أمرًا بالغ الأهمية لبقاء المريض. على الرغم من التقدم في التشخيص والإدارة، لا تزال ACS تحت التشخيص، وهناك فجوة في الرعاية تتعلق بمشاركة الصيادلة وطاقم التمريض في إدارتها.

**الهدف :**يهدف هذا المقال إلى استكشاف الدور المساهم للصيادلة والممرضين في إدارةACS ، مع التركيز على الرعاية التعاونية، والتشخيص المبكر، والتدخل الفوري للتقليل من العواقب الشديدة لهذه المتلازمة.

**الطرق :**تم إجراء مراجعة للأدبيات الحالية، والإرشادات السريرية، ودراسات الحالة لتقييم الدور الحالي للصيادلة والممرضين في إدارة .ACS تم فحص جوانب رئيسية مثل المراقبة، والتشخيص المبكر، والتدخلات الدوائية، واستراتيجيات رعاية المرضى.

**النتائج :**يساهم الصيادلة في تحسين إدارة الأدوية، خاصة في إدارة توازن السوائل وضمان الجرعات المناسبة للأدوية للمرضى في الحالات الحرجة. الممرضون دورهم حيوي في مراقبة المرضى بحثًا عن علامات ACS وارتفاع ضغط تجويف البطن(IAH) ، وتنفيذ التدخلات المبكرة، وتقديم الرعاية المستمرة للمرضى. يعمل كلا المحترفين الصحيين معًا لضمان التعرف الفوري والإدارة المناسبة لمنع تقدم.ACS

**الخلاصة :**يعد الكشف المبكر والرعاية التعاونية التي تشمل الصيادلة وطاقم التمريض أمرًا أساسيًا في الوقاية من مضاعفات .ACS تتطلب إدارة ACS العمل الجماعي بين التخصصات لضمان أفضل نتائج للمرضى، ويعد إشراك المحترفين الصحيين إلى جانب الأطباء، وبشكل خاص الصيادلة والممرضين، أمرًا حاسمًا في تحسين جودة الرعاية.

**الكلمات المفتاحية :**متلازمة تجويف البطن، ACS، الصيادلة، التمريض، الضغط داخل البطن، الرعاية الحرجة، الرعاية التعاونية.