Assessment of the patient with acute abdominal pain


Summary
Abdominal pain has many causes, from simple to complex presentations. Patients with abdominal pain may have a number of physiological and psychological needs. Nurses have a key role to play in patient assessment, history taking and management.

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Aims and intended learning outcomes
The aim of this article is to assist nurses in the assessment of abdominal pain in adults presenting to the accident and emergency (A&E) department and other acute settings. Through a structured approach to history taking and pain assessment, nurses should be able to differentiate abdominal pain caused by acute rather than non-acute conditions. Within a contemporary, interprofessional healthcare environment, this will aid rapid and effective treatment.

After reading this article you should be able to:

› Describe the anatomy and physiology of organs associated with abdominal pain.

› Identify the main causes of abdominal pain and differential diagnoses.

› Ask relevant questions of a patient presenting with abdominal pain.

› Discuss the appropriate investigations and nursing care required.

› Understand the principles of symptom management.

Introduction
A nurse is the first healthcare professional many patients with abdominal pain may encounter, whether in an A&E department, walk-in centre, outpatient clinic, primary care setting or surgical ward. Traditional professional working boundaries are no longer fixed in the current healthcare climate (Coombs and Ersser 2004).

Many nurses of all levels are involved in the initial assessment and treatment of a patient before a medical consultation. It is therefore desirable that in addition to traditional nursing assessments, registered nurses are able to ask the correct questions, initiate tests and implement first-line treatments to ensure a timely and effective experience for the patient.

Abdominal pain is one of the most common reasons that people seek medical care (Kelso and Kugelmas 1997). It may be difficult to establish the cause of the abdominal pain because of the diversity of clinical signs and symptoms. However, the history can provide 70 per cent or more of the clues to the diagnosis and must be taken accurately and carefully (Birkitt and Quick 2002, Talley and O’Connor 2006). The conditions that cause abdominal pain may be acute or non-acute.
Anatomy and physiology

Disorders of the abdomen may involve one or more organs within the abdominal cavity. This cavity contains the stomach, spleen, liver, gall bladder, pancreas, kidneys, small intestine and large intestine. Additionally, some abdominal organs are contained within the pelvis: the bladder, caecum, appendix, sigmoid colon, rectum and female reproductive organs. When assessing a patient with abdominal pain, it is essential that the nurse understands abdominal anatomy and knows the position of the abdominal organs. During clinical examination the abdomen is often divided into four quadrants: right upper quadrant, left upper quadrant, right lower quadrant and left lower quadrant (Figure 1).

Patients may be able to localise the position of their abdominal pain within the four quadrants and this enables the nurse to decide which organs or structures may be involved. Figure 2 shows the location of some of these organs or structures.

The structures located within the right upper quadrant are: right lobe of the liver; gall bladder; head of pancreas; duodenum; sections of the ascending and transverse colon.

The structures located within the left upper quadrant are: left lobe of the liver; stomach; spleen; body of the pancreas and sections of the descending and transverse colon.

The structures located within the right lower quadrant are: caecum; appendix and section of the ascending colon.

The structures located within the left lower quadrant are: sigmoid colon and section of the descending colon.

A large membrane called the peritoneum surrounds all the organs and viscera within the abdominal cavity. Kidneys and ureters are situated posterior to (behind) the intraperitoneal organs and their position is described as retroperitoneal. Pain affecting these structures may not always involve the abdomen, and may manifest in the loin area (at the back of the torso between the ribs and the hips). The bladder and reproductive organs are situated in the lower abdomen within the pelvis.

Causes of abdominal pain

Acute surgical emergencies constitute about 50 per cent of all general surgical admissions. About half of these are for abdominal symptoms, predominantly pain, and half of this group resolve without operation. The rest undergo emergency surgery or a scheduled procedure.

**FIGURE 1**
The four abdominal quadrants

**FIGURE 2**
Organs in the abdominal cavity
Bowel obstruction Both the small and large intestines can become obstructed. The patient may complain of anorexia, vomiting with relief afterwards, colicky abdominal pain and a distended abdomen. Auscultation may reveal tinkling bowel sounds although this is not a consistent finding. Some patients may also be constipated and may not be passing any flatus, as stool and wind are unable to pass the obstruction (Longmore et al 2004). The position of the obstruction may be confirmed on abdominal X-ray. Causes of large bowel obstruction include impacted faeces, tumours and volvulus (where the intestine has twisted around itself). Causes of small bowel obstruction include adhesions, Crohn’s disease, tumours and swallowed foreign bodies (Longmore et al 2004). Cholecystitis This is defined as acute or chronic inflammation of the gall bladder, usually caused by stones of mixed chemical composition, predominantly cholesterol with some bile. Symptoms develop from mechanical obstruction, local inflammation or a combination of these factors (Uphold and Graham 1999). Pain can be colicky or constant and is usually localised to the right upper quadrant. Associated symptoms often include anorexia, nausea, vomiting and fever.

Gastrointestinal disease Gastrointestinal haemorrhage is a common reason for acute surgical referral and is manifested by haematemesis (vomiting of blood), rectal bleed or melaena (black, ‘tarry’ faeces or vomit that contains blood) (Birkitt and Quick 2002). Patients may present with hypotension, shock and collapse. Peptic ulceration is the most common cause of serious gastrointestinal haemorrhage. Dyspeptic pain and tenderness in the epigastrium are the cardinal features of peptic ulceration. Vomiting may also occur, especially with a gastric ulcer. Bleeding may be seen in gastritis following alcohol or non-steroidal anti-inflammatory drug (NSAID) consumption.

Appendicitis Appendicitis is the most common surgical emergency (Longmore et al 2004). Appendicitis is inflammation of the appendix, and as the inflammatory process begins, there is colicky pain that usually starts around the umbilicus or epigastrium. However, as the inflammation increases and the peritoneum becomes involved, the pain shifts to the right iliac fossa (within the right lower quadrant). Associated symptoms may include loss of appetite, vomiting, constipation and occasional diarrhoea.

Gynaecological emergencies Patients with gynaecological disorders presenting to A&E with abdominal pain may be difficult to distinguish from patients with other pathologies (Wyatt et al 2005). As stated earlier, the history can provide 70 per cent of the clues to the underlying diagnosis. These may include early pregnancy abortions (miscarriages), ovarian cysts and endometriosis. Two common gynaecological presentations are:

Ectopic pregnancy This occurs when the gestational sac implants outside the uterus, with 96 per cent implanting in the Fallopian tube (Wyatt et al 2005). One in 100 pregnancies in the UK are ectopic. The pregnancy may reach 10-14 weeks before tubal rupture (Wyatt et al 2005). Ectopic pregnancy must be considered in any pre-menopausal woman presenting with abdominal pain or vaginal bleeding. The patient may present with left or right iliac fossa pain and slight bleeding may follow the pain but not in all cases. The patient may have experienced amenorrhoea (absence of menstruation) for approximately eight weeks. However, the patient can present acutely with sudden onset of unilateral pain and collapse. She may be shocked and require immediate resuscitation, diagnosis and surgical intervention. It is important to note that this is the most common cause of maternal mortality in the first stage (trimester) of pregnancy.

Pelvic inflammatory disease This global term refers to inflammation of the pelvic structures caused by chlamydial or gonococcal infection. The infection spreads from the cervix to the uterus (endometritis), Fallopian tubes (salpingitis), ovaries (oophoritis) or adjacent peritoneum (peritonitis) (Wyatt et al 2005). Ninety per cent of cases are sexually transmitted and sexually active women aged between 15 to 20 years are at particular risk. Patients usually present with lower abdominal pain, vaginal
discharge, nausea and/or vomiting. In acute infections the patient will be pyrexial and systemically unwell. **Hepatitis** Hepatitis is a disease affecting the liver. Hepatitis A is infectious, occurs mainly in the tropics and is transmitted through infected food, water, faeces and urine. Hepatitis B is transmitted via sexual intercourse with a carrier and by infected blood, for example, through sharing needles or tattooing (Wyatt et al 2005).

Hepatitis A is the most common type and the incubation period is six to six weeks (Moulton and Yates 1999). Signs and symptoms may differ depending on the hepatitis strain, therefore the history should be carefully considered. Patients may present with abdominal pain and/or right upper quadrant pain, anorexia (loss of appetite), jaundice, dark urine and pale stools, hepatomegaly (enlarged liver), splenomegaly (enlarged spleen), pyrexia and urticaria. Smokers will typically mention that they no longer enjoy smoking and have not smoked a cigarette since the symptoms began. **Leaking abdominal aortic aneurysm** Aneurysms are caused by the degeneration of the elastin and/or collagen of the arterial wall. Abdominal aortic aneurysms are relatively uncommon and are found mainly in men over 70 years of age. Elective surgery can have a mortality rate of less than 5 per cent, however, mortality after rupture is in excess of 80 per cent. Abdominal pain is the most common symptom of a leaking aneurysm (Birkitt and Quick 2002). Features include severe, sudden onset of central abdominal pain or generalised abdominal pain radiating to the back for up to a week. **Pancreatitis** Pancreatitis is acute inflammation of the pancreas. There is a 5-10 per cent mortality rate associated with this diagnosis (Longmore et al 2004). There are many causes of the disease and to remember some of the less common ones, Longmore et al (2004) suggest using the mnemonic ‘GET SMASH’D’ (Box 1). However, gallstones and alcoholism together account for about 80 per cent of acute pancreatitis worldwide (Birkitt and Quick 2002). The pain may begin gradually or suddenly and is constant and severe (Moulton and Yates 1999). Central abdominal pain radiates to the epigastrium and the back. Associated symptoms include vomiting and the patient may look pale and clammy. These signs of severe shock are caused by fluid moving from the intravascular compartment into interstitial tissue. The patient may require immediate resuscitation and opioid analgesia. **Peritonitis** Peritonitis is defined as inflammation of the peritoneum (Birkitt and Quick 2002). Initially, peritoneal inflammation is often localised to the affected area, however, this may spread and become generalised. Sudden perforation of any viscus leads to life-threatening generalised peritonitis. The patient will usually complain of severe abdominal pain. On physical examination ‘guarding’ may be found, that is, spasm of the abdominal wall muscles to protect inflamed viscera from pressure. **Urinary tract infection/pyelonephritis** Urinary tract infection (UTI) is common, especially in females. Most women will have more than one UTI in their lives. Most UTIs are caused by a single organism that invades the bladder via the urethra (Longmore et al 2004). Proximal invasion of the organism into the renal system via the ureter may result in acute or chronic pyelonephritis (Wyatt et al 2005).

UTIs are characterised by suprapubic discomfort, dysuria (pain or burning during micturition), frequency, haematuria (blood in the urine), urgency and cloudy urine. Pyelonephritis is characterised by loin and/or back pain. The patient will be systemically unwell and will experience pyrexia, malaise and vomiting.

**Time out 2**

Consider patients with abdominal pain that may have an infectious cause. List these causes. What implications does this have for nursing practice? Consult your local infection control policy for care of patients with conditions such as hepatitis A and gastroenteritis.

**Nursing assessment**

Careful history taking and patient assessment are necessary to ensure that the patient receives appropriate treatment for abdominal pain. The depth of the assessment will probably be determined by the experience of the nurse and the role in which he or she is employed. Nevertheless,
regardless of the clinical setting, there are specific questions that should be asked of all patients with abdominal pain.

A systematic approach to assessment should be used so that vital information is not overlooked. Questions should be asked about:

- Pain.
- Associated symptoms.
- Past medical and medication history.
- Social and family history.

**Pain Position and radiation** It is important to determine the position of the pain. It may be diffuse and widespread across the abdomen or localised to one area. The patient should be asked to point to the area where pain is felt. Parietal pain is sharp, well localised and originates from inflammation of the parietal peritoneum (Uphold and Graham 1999). Visceral pain is deep, dull and poorly localised and may originate from a solid or hollow structure. The patient should also be asked if the pain travels anywhere (radiation) or is felt in another region of the body (referred). Pain radiates to the back with pancreatic disease, an abdominal aortic aneurysm or peptic ulcer disease (Talley and O’Connor 2006). Referred pain is felt at a distance from the source. It occurs because of the anatomical relationships that exist between the affected organ or viscera and associated nerve tracts (Kelso and Kugelmas 1997). A classic example of referred pain is the patient with peritonitis secondary to bleeding or perforation where diaphragmatic irritation causes pain in the shoulder.

**Quality or character of the pain** The patient should be asked to describe the pain. There are classic descriptions of pain, however, you should remember that patients’ language, culture and previous experiences of pain may all affect how pain is described. The pain may be dull or aching, possibly associated with conditions such as constipation or a chronic hernia. Burning pain is often associated with a peptic ulcer. Colicky or cramping pain comes and goes and is often associated with obstruction of the bowel, bile duct or ureters (Talley and O’Connor 2006). Sharp or tearing pain is often constant and can be associated with a dissecting aneurysm, ruptured ectopic pregnancy or appendicitis.

**Relieving and exacerbating factors** Many factors may make abdominal pain worse or better. Patients should be asked if body position, ingestion of food, vomiting and passing wind or stool aggravates or relieves the pain (Barkauskas et al 2002). Pain associated with eating or vomiting may indicate peptic ulceration. Patients who obtain relief from moving around usually have colicky pain (Talley and O’Connor 2006). The efficacy of any medications taken such as analgesia or antacids should be noted.

**Severity** The severity of the pain should be noted, both at the present time and since symptoms began. Rating the pain verbally on a score of 0 (no pain) to 10 (most severe) can be helpful (Endacott 2003). This is useful when evaluating the efficacy of analgesia or antispasmodics because the patient can compare the pain before and after the medication. If the patient has experienced a similar pain or the condition is chronic, then the severity of the current pain can be compared to previous levels of pain. This may indicate recurrence or worsening of a condition.

**Timing and duration** It is essential to note the time that the pain began and how often it occurs. This may help to determine if the pain is acute or chronic (Talley and O’Connor 2006). It may be useful to ask patients when they last felt completely well so that they can accurately remember the time that the symptoms started.

**Time out 3**

Reflect on how you assess patients’ pain. Do you adopt a structured approach? Do you use a verbal scale or a visual analogue scale? If you do not, perform a literature search and find a pain assessment scale. Discuss its use for abdominal pain assessment in your clinical setting with a senior colleague.

**Associated symptoms**

- **Appetite or weight change**
  Marked weight loss and anorexia are frequently symptoms of serious, often malignant abdominal disorders (Birkitt and Quick 2002). They may be associated with dysphagia (difficulty in swallowing), malaise, abdominal bloating or fullness and heartburn. These symptoms may be dismissed as trivial by some patients and therefore nurses need to ask about them directly during assessment.

- **Bowel habit**
  Bowel habit differs between individuals in terms of frequency and consistency (Birkitt and Quick 2002). Changes in bowel habit may or may not be related to abdominal pain and it is important to determine if these changes are acute or chronic. The presence of blood in the stools, either fresh (bright red) or altered (dark/black), should be noted. Fresh blood in the stools may indicate a lower intestinal bleed or inflammation. Altered blood indicates higher intestinal bleeding. Diarrhoea associated with abdominal pain may be caused by infection or
inflammation in the bowel (Kelso and Kugelmas 1997). Constipation may be caused by medications such as codeine, anorexia or dehydration. It may also arise because of a bowel obstruction caused by carcinoma (Talley and O’Connor 2006) or surgical adhesions.

**Gynaecological symptoms** Lower abdominal pain in females may be caused by a gynaecological disorder. In addition to pain, early pregnancy disorders such as ectopic pregnancy where the pregnancy has implanted outside the uterus or a threatened abortion may cause vaginal bleeding. During assessment female patients should be asked about their menstrual history including the date of the last menstrual period and current or previous pregnancies (Barkauskas et al 2002). The patient should be asked about other gynaecological symptoms such as vaginal discharge or lower abdominal swelling.

**Nausea and vomiting** Nausea and vomiting are often present with acute abdominal pain (Kelso and Kugelmas 1997). The timing and frequency of vomiting are important when trying to establish a diagnosis; early morning nausea and vomiting may indicate pregnancy. Vomiting after the onset of pain is more consistent with an acute abdomen (Kelso and Kugelmas 1997). Causes of vomiting associated with abdominal pain include gastritis, gastroenteritis or pancreatitis. Intractable vomiting may suggest a bowel obstruction. The content and amount of vomit should be investigated and documented; vomit the colour and consistency of coffee grounds, composed of altered blood or fresh blood suggests gastritis or an upper gastrointestinal bleed.

**Urinary symptoms** Lower abdominal pain, frequency, haematuria and dysuria are indicative of a UTI. Haematuria associated with severe loin pain usually suggests a stone in the kidneys or ureters (Wyatt et al 2005) or pyelonephritis. Painless haematuria is suspicious of genitourinary carcinoma and should always be investigated, usually by a urology department.

**Past medical and medication history** Recording details of past medical and medication histories is important for all patients. However, for the patient with abdominal pain there are particular factors that need to be considered. Table 1 shows a list of significant clues in the history and their relevance to a patient with abdominal pain. Known allergies should also be recorded.

**Social and family history** It is important to elicit some specific information about the patient’s social history. Current and past employment may be of significance in relation to working with toxic substances (liver disease), stress (gastric ulcer, irritable bowel syndrome) and anxiety (a psychological cause of abdominal pain). Alcohol and cigarette consumption should be noted because both can contribute to abdominal disorders. Family health is important. First, there may be a family history of bowel cancer or inflammatory bowel disease (Talley and O’Connor 2006) and second, a close contact (family, friend or colleague) may have an infectious disorder such as hepatitis or gastroenteritis which may have been transmitted to the patient. Finally, hepatitis and parasitic infections are endemic in some overseas locations, therefore a thorough travel history should be recorded (Moulton and Yates 1999).

### Nursing care

All patients should have their physical and psychological needs met, regardless of presenting symptoms or diagnosis. There is a need to maintain privacy and dignity, consider fluid balance and monitor or assist with elimination. Patients should be kept nil by mouth until the need for operative intervention has been ruled out (Longmore et al 2004). The patient with acute abdominal pain may be anxious or afraid about causes and possible outcomes, therefore the nurse should provide psychological support for the patient and family. This section addresses some of the specific aspects of nursing care, diagnostics

### Table 1

<table>
<thead>
<tr>
<th>Past medical and medication history</th>
<th>Significance for the patient presenting with acute abdominal pain</th>
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<tbody>
<tr>
<td>Alcoholic liver disease</td>
<td>Risk of pancreatitis, gastrointestinal bleed, hepatitis, oesophageal varices and hepatic carcinoma</td>
</tr>
<tr>
<td>Cardiac disease</td>
<td>Abdominal pain may be an atypical presentation of an acute coronary syndrome</td>
</tr>
<tr>
<td>Crohn’s disease/ulcerative colitis</td>
<td>Flare up of condition</td>
</tr>
<tr>
<td>Diabetes</td>
<td>May be a sign of ketoacidosis</td>
</tr>
<tr>
<td>Early pregnancy (less than ten weeks)</td>
<td>Possible ectopic pregnancy</td>
</tr>
<tr>
<td>Intravenous drug use</td>
<td>Risk of hepatitis through needle sharing</td>
</tr>
<tr>
<td>Patient taking multiple medications</td>
<td>Increased risk of damage to the liver (responsible for the majority of drug metabolism)</td>
</tr>
<tr>
<td>Patient taking NSAIDs</td>
<td>Increased risk of gastric irritation/bleeding</td>
</tr>
<tr>
<td>Peptic ulcer disease</td>
<td>Increase in pain may indicate possible perforation</td>
</tr>
<tr>
<td>Pregnancy (need to confirm gestational age of fetus)</td>
<td>Abortion in early pregnancy (up to 16 weeks), labour in later pregnancy</td>
</tr>
<tr>
<td>Previous surgery</td>
<td>Adhesions, Infection (post-operative), Recurrence of previous problem</td>
</tr>
<tr>
<td>Sickle cell disease</td>
<td>Sickle cell crisis</td>
</tr>
</tbody>
</table>
and interventions that may be required for the patient with acute abdominal pain.

**Time out 4**

Before reading the next section, reflect on the assessments you have carried out on patients with abdominal pain.

Which vital signs did you record? What other tests did you perform? What was your rationale? If you were teaching a nursing or medical student could you explain what you were looking for?

**Vital signs** Monitoring the patient’s vital signs allows the nurse to record an admission baseline, detect abnormalities that may indicate a disease process and, importantly, spend time observing the patient. All patients with acute abdominal pain should have the following vital signs recorded.

**Temperature** This should be taken for every patient with abdominal pain. A raised temperature may suggest the presence of a bacterial infection or an inflammatory process such as appendicitis. The degree of temperature together with other observations such as heart rate and respiratory rate will indicate if the patient is septic and in need of urgent medical management (Kinnear 2004).

Note that older patients with abdominal pain caused by an infectious process may not present with a raised temperature. Immune response appears to decline with age and this may increase the risk of infectious diseases and their complications (Miller 1996).

**Heart rate** Tachycardia (relative to age) may indicate pain, fear, infection or hypovolaemic or septic shock. A tachycardic patient with abdominal pain should be considered an emergency and in need of urgent medical assessment. Be aware of patients who may not present with a ‘classic tachycardia’ despite being in severe pain. Some patients have physiological or pharmacological factors that may alter their heart rates. This group may include pregnant women in the second and third trimesters, patients taking beta blockers and athletes or fit individuals with a slower than usual resting pulse rate.

**Blood pressure** Hypertension may indicate pain or anxiety. Hypotension may indicate hypovolaemic or septic shock. In an adult patient with abdominal pain, a systolic blood pressure of 100mmHg or less should be considered significant until proven otherwise.

**Respiratory rate** A rise in respiratory rate may indicate increased sympathetic activity because of hypovolaemic shock or severe dehydration. Tachypnoea, together with tachycardia, is a sensitive early indicator of shock.

**Capillary refill time (CRT)** Capillary refill should occur within two seconds (Mackway Jones et al 2001) and a CRT of more than two seconds is indicative of poor peripheral perfusion possibly caused by hypovolaemia or severe dehydration. Press on the sternum/forehead/nail bed for two seconds in adults or five seconds in children and count seconds as blanched tissue returns to its usual colour.

**Blood glucose measurement** If clinical signs suggest pancreatitis, insulin production may be decreased and patients can be expected to have higher than usual circulating blood glucose levels. This is because glucose can no longer enter muscle and adipose tissue (Parker 2004).

**Electrocardiogram** All adult patients over the age of 40 with upper/epigastric abdominal pain should have an electrocardiogram (ECG) to rule out a cardiac cause. Heart disease can occur at an earlier age in some patients with increased risk factors. Younger adult patients from high risk groups, such as those with hypertension, diabetes or from south east Asia, should also have an ECG recorded. Patients of south east Asian origin have an increased risk of mortality because of coronary heart disease (Hobbs 2004).

**Urinalysis** Every patient with abdominal pain should provide a clean specimen of urine for urinalysis. Blood in the urine may indicate infection or a urinary tract stone. Infection may also cause the presence of protein, nitrites or leukocytes. Bilirubin in the urine may be indicative of hepatic or biliary disease and ketones may be present in anorexia, vomiting or diabetic ketoacidosis (Cook 1996). Female patients who are of menstruating age should have urine beta human chorionic gonadotrophin tested in case the pain is pregnancy related.

**Blood tests** Patients with abdominal pain usually require blood tests to assist with diagnosis or ruling out differential diagnoses. A cannula may also be sited to administer intravenous (IV) fluids and medications.

Blood should be taken for full blood count, urea and electrolytes, serum amylase and, in cases where systemic infection is suspected, blood cultures (Longmore et al 2004). Blood group and cross matching should be performed for the patient who has lost blood or who is likely to have emergency surgery. Table 2 indicates common blood tests, their normal levels and their significance for the patient with abdominal pain.

**Fluid balance** IV fluid therapy may be prescribed for the patient with abdominal pain who is nil by mouth and/or volume depleted because of blood loss, vomiting or diarrhoea. IV fluid therapy is used to correct electrolyte imbalances and to...
replenish fluids in one or more of the fluid compartments: interstitial, intracellular or extracellular (Cook 2003). The decision to prescribe IV fluids and the subsequent choice of fluid will be based on the patient’s clinical signs and symptoms and haemodynamic status.

The fluid prescribed may be crystalloid, colloid or blood for patients who have lost blood. Crystalloids contain solutes that are dissolved in water and may consist of dextrose, electrolytes or a combination of the two (Cook 2003). Crystalloids help to perfuse both the intra and extracellular spaces and 0.9% sodium chloride is often the first choice IV fluid for the patient with an acute abdomen (Longmore et al 2004). Colloids are composed of protein and large sugar molecules that are suspended in water. They increase the osmotic pressure of the vascular space to pull fluid into it (Cook 2003), helping to increase blood pressure in a shocked patient.

Regardless of whether IV fluids are administered or not, monitoring fluid intake and urine output for the patient with acute abdominal pain are essential. Additionally, vomitus and diarrhoea should be noted on a fluid balance chart to ensure that an accurate record of the patient’s hydration is maintained.

**Analgesia** Patients may benefit from non-pharmacological methods of pain control such as positioning, application of a warm compress and anxiety reduction through reassurance. Nevertheless, analgesia will be prescribed or given for many patients via a patient group direction to relieve pain and distress. A perception persists that giving analgesia to a patient with abdominal pain before a diagnosis is established is wrong (Pasero 2003). Tanabe and Buschmann (2000) found that nurses withhold analgesia because they presume that it interferes with the process of medical staff making a diagnosis. This opinion, however, appears to be unfounded. Mackway-Jones and Harrison (2000), following a review of contemporary literature on the subject, suggest that there is considerable benefit to the patient from pain relief with no change in diagnostic accuracy. The ability to make an accurate diagnosis for patients with acute severe abdominal pain who are given IV opiates does not differ from those patients who received no analgesia or a placebo (Pasero 2003).

Choice of analgesia will depend on the cause of the abdominal pain, severity of pain, associated symptoms such as vomiting, past medical history, allergies and other medications currently being taken. Mild to moderate pain may be treated with a compound analgesic preparation such as one containing aspirin or paracetamol (British National Formulary (BNF) 2004). For moderate to severe pain, particularly of visceral origin, an opioid analgesic may be required (BNF 2004).

**TABLE 2**

<table>
<thead>
<tr>
<th>Test</th>
<th>Normal range</th>
<th>Significance in abdominal pain</th>
</tr>
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<tbody>
<tr>
<td>Haemoglobin</td>
<td>13-18 (males) 11.5-16.5 (females)</td>
<td>May be lowered with acute or chronic blood loss</td>
</tr>
<tr>
<td>White blood cells</td>
<td>4-11</td>
<td>May be raised in the presence of infection</td>
</tr>
<tr>
<td>Platelets</td>
<td>150-400</td>
<td>May be lowered in blood loss. If abnormal, cloting levels should also be checked</td>
</tr>
<tr>
<td>Sodium Potassium</td>
<td>135-145 3.5-5.0</td>
<td>Abnormalities of electrolytes may be present during vomiting and diarrhoea</td>
</tr>
<tr>
<td>Urea</td>
<td>30-6.5 60-125</td>
<td>Urea and creatinine may be raised in renal impairment. Urea alone may be raised in severe dehydration</td>
</tr>
<tr>
<td>Amylase</td>
<td>0-180</td>
<td>Raised in pancreatitis. May also be raised with a perforated ulcer</td>
</tr>
<tr>
<td>Group and save/ cross match</td>
<td></td>
<td>Should be taken for patients with suspected or known hypovolaemia and any patients who may need urgent surgery. Also to confirm Rhesus status in all pregnant patients</td>
</tr>
</tbody>
</table>

This may be oral for the patient who is not nil by mouth or vomiting, however, for most severe cases of abdominal pain IV morphine will be prescribed. Morphine is an effective analgesic for severe pain although it frequently causes nausea and vomiting (BNF 2004). When given intravenously, morphine should be diluted with 0.9% sodium chloride to enable administration titrated to the pain, for example, 10mg morphine sulphate/10ml 0.9% sodium chloride. Opioid analgesia can cause respiratory depression (Longmore et al 2004), therefore it is essential that the nurse observes the patient’s respiratory status. For patients with renal or biliary colic a NSAID such as diclofenac sodium given rectally can be a useful alternative (BNF 2004). These drugs are nephrotoxic and should not be prescribed until the patient’s renal function has been assessed.

**Time out 5**

Before reading on list the anti-emetics with which you are familiar. Do you know the dosage and side effects? While it is not usual practice for nurses to prescribe anti-emetics, they are administered by nurses regularly and it is essential that this is done safely with the appropriate knowledge.
Anti-emetics  Patients with abdominal pain may experience associated nausea or vomiting. This may be caused by the underlying disease process or the use of opiates for pain management. A paralytic ileus can occur because of diminished peristalsis and in such cases the insertion of a nasogastric tube can decompress the stomach and reduce discomfort (Parker 2004). The administration of a suitable anti-emetic is an essential part of care for a nauseated or vomiting patient with abdominal pain (BNF 2004):  

Phenothiazines  such as Stemetil (prochlorperazine mesilate) injection 12.5mg/ml. This group of drugs can be given intramuscularly or as suppositories. They are indicated for severe nausea and vomiting. They block the chemoreceptor trigger zone in the brain and are effective in reducing nausea caused by opiates. They can cause extrapyramidal side effects such as muscle dystonia, especially in women, children and older patients.  

Antihistamines  such as cyclizine injection 50mg/ml. These drugs can be given intravenously and are useful for nausea and vomiting but may cause drowsiness. It is important to note that the patient having opiate analgesia may already be drowsy.

**Metoclopramide hydrochloride** 5mg/ml (normal adult dose 10mg) can be given intravenously. It acts directly on the gastrointestinal tract, increases gut motility and is therefore useful for vomiting caused by gastric, hepatic or biliary disease. It should not be used in intestinal obstruction because it promotes gastric emptying. It can cause extrapyramidal side effects such as muscle dystonia, especially in women, children and older patients.

**Conclusion**

Abdominal pain has many causes, from simple, non-acute presentations such as UTI to acute, life-threatening presentations such as a leaking abdominal aortic aneurysm. The complexity of some abdominal disorders means that patients with abdominal pain may have many physiological and psychological needs. Contemporary registered nurses of all levels have a key role in patient assessment, history taking and initial management. This helps to expedite appropriate patient care and treatment.

**Time out 6**

Now that you have completed the article, you might like to write a practice profile. Guidelines to help you are on page 68.