

Perioperative management of the higher risk surgical patient with an acute surgical abdomen undergoing emergency surgery

For use in (clinical areas):	All clinical areas
For use by (staff groups):	All clinicians
For use for (patients):	The higher risk surgical patient admitted with an acute surgical abdomen undergoing emergency surgery
Document owner:	Drs Lawrence and Bright
Status:	Approved

Purpose of the Guideline

This document has been written to assist in the identification and perioperative management of the adult higher risk patients with an acute surgical abdomen requiring emergency surgery, drawing on recent guidance from the Royal College of Surgeons and the Association of Surgeons of Great Britain and Ireland.

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Recommendations

Admission of the Emergency Patient with an Acute Surgical Abdomen

All adult emergency surgical patients should have an emergency surgical admission proforma completed. Those patients with an acute abdomen should have the 'Initial Management of Acute Abdomen In Adults Protocol' completed (page 10 of the admission proforma). The higher risk surgical patient should be identified and care should be directly supervised by a consultant surgeon.

The Higher Risk Surgical Patient Requiring Emergency Surgery

The higher risk patient is defined by any **one** of the following:

- i. P-POSSUM predicted hospital mortality of $\geq 5\%$ (see page 11 of the emergency surgical admission proforma and use the P-POSSUM calculator-link on home page of the intranet)
- ii. ASA 3 + 1 acute organ dysfunction
- iii. ASA 4 or 5
- iv. Dialysis dependent patients
- v. Patients with lactate > 4 mmol/L
- vi. Patients with sepsis and organ dysfunction

If the higher risk patient is a candidate for emergency surgery, they should be transferred for perioperative optimisation to **theatre recovery**.

Preoperative Optimisation In Recovery

The patient remains under the direct care of the surgical team but preoperative optimisation is coordinated by the emergency anaesthetic consultant and / or the intensive care team.

Preoperative optimisation should include, where appropriate:

1. Fluid and electrolyte resuscitation with goal directed therapy including invasive monitoring and inotropes as indicated
2. Use of the West Suffolk Sepsis Six bundle if meeting criteria (SIRS >2 with suspected infection); interventions are listed on page 10 of the admission proforma
3. Urinary catheter insertion and consideration of NG tube insertion
4. Correction of abnormal clotting
5. Pain control to include regular intravenous paracetamol qds (unless < 50 kg, renal failure, hepatic failure) and appropriate intravenous opioids
6. Temperature control
7. VTE prophylaxis with mechanical VTE devices
8. All patients to be on electric beds

All prescribed medications should be documented on the patient's inpatient drug chart. If antibiotics and analgesia have already been given prior to recovery admission their dose and timings must be clearly recorded on the inpatient drug chart to avoid duplication.

Patients should remain in recovery for no more than 4 hours before proceeding to theatre. Patients with septic shock should undergo surgical intervention and source control within 3 hours of diagnosis.

As it is recognised that delayed laparotomy/ laparoscopy causes mortality and morbidity, patients should not normally be admitted to critical care prior to surgery. To avoid delays they should be resuscitated either in recovery or in theatre, at the discretion of the on call consultant anaesthetist. Critical care can make up any infusion required.

Intraoperative Care

Intraoperative care should include:

1. Fluid and electrolyte resuscitation with goal directed therapy including invasive monitoring and inotropes as indicated. LIDCO and NICOM available in theatre complex
2. Analgesia:
Consider intrathecal diamorphine for perioperative analgesia (if no contraindications exist)
3. Temperature control
4. Antibiotic prophylaxis / on-going treatment
5. Antiemetics
6. Mechanical VTE Prophylaxis

At the end of surgery an end of surgery bundle should be completed.

End of Surgery Bundle

The RCS recommends that an End of Surgery Bundle is completed within the last 30 minutes of surgery in all higher risk patients and patients who deteriorate during surgery.

The end of surgery bundle comprises:

1. Recalculation of P-POSSUM with the actual operative data (the P-POSSUM calculator can be accessed on the bottom right of the intranet home page)
2. Performance of Arterial Blood Gas with specific assessment of lactate, acid-base status and PaO₂: FiO₂ ratio
3. Fluid assessment, including summarisation and documentation of intra-operative fluids given and documentation of blood loss
4. Ongoing post-operative intravenous fluid prescription
5. Reversal of muscle relaxant, including mandatory use of peripheral nerve stimulator and documentation of train-of-four and reversal agent given (if appropriate)
6. Temperature checked and recorded and arrangements made for further management as appropriate
7. Consultant anaesthetist in conjunction with consultant surgeon, and if necessary intensive care, to decide best place of postoperative care

Place of Post Operative Care

All higher risk patients (see above criteria) are to receive the minimum of level 2 care postoperatively in Recovery for the first postoperative night. Critical care admission should be discussed if:

1. There is a significant and persistent metabolic acidosis and/ or lactate > 4 mmol/L
2. A need for invasive ventilation exists
3. Vasopressor therapy with agents other than phenylephrine and metaraminol required
4. Inotropic therapy required
5. Need for haemofiltration exists

6. Postoperative patient deterioration in Recovery

All patients admitted to Recovery for postoperative care will be reviewed by a consultant surgeon and the critical care team on the first postoperative morning to decide upon the patient's on-going management.

References

1. Emergency General Surgery: The Future A Consensus Statement JUNE 2007; Association of Surgeons of Great Britain and Ireland
2. The Higher Risk General Surgical Patient: Towards Improved Care for a Forgotten Group; Report of the Royal College of Surgeons of England / Department of Health Working Group on Peri-operative Care of the Higher Risk General Surgical Patient

Development of Clinical Guideline

Statement of clinical evidence

This guideline is based upon the published national guidance by the Royal College of Surgeons and the Association of Surgeons of Great Britain and Ireland in the identification and perioperative management of the higher risk surgical patient undergoing emergency surgery.

Contributors and peer review

This guideline represents a multidisciplinary effort. The following departments contributed to its development:

- Department of Anaesthesia
- Department of Critical Care
- Department of Surgery

Distribution list/dissemination method

This guideline will be disseminated through the trust via the pink book and hard copies will be found in all clinical areas.

Document configuration information

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Appendix 1: Emergency Surgical Admission Proforma (pages 1, 10 and 11 printed below)

SURGICAL EMERGENCY ASSESSMENT

Patient Documentation

Emergency Admission

General Surgery / Orthopaedics / Urology / Gynaecology / ENT

Patient Details	Addressograph
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Date of admission	
Admitting Consultant	
Source of referral	GP A&E OPD Other
Diagnosis on discharge	
Procedure performed	
Discharging Consultant	
Follow up plans	

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Initial management of the Acute Abdomen in Adults Protocol			
Action / Assessment	Time	Initials	Key Results or reason not done
OXYGEN Aim to maintain saturation >95%			
ENSURE IV ACCESS AND BLOODS TAKEN FBC, U&E, LFT, Amylase, CRP, Clotting, Glucose, G&S			
INTRAVENOUS FLUIDS PRESCRIBED Hartmann's to maintain urine output >0.5ml/kg/hour (0.9% N Saline in renal patients) If systolic BP <90: Stat 20ml/kg crystalloid			
HOURLY OBSERVATIONS & MEWS SCORE STARTED HR, RR, BP, SaO ₂ , Temp Urine Output – may need catheter if septic			
ASSESSMENT OF SIRS: > 2 OF Temperature <36 °C (96.8 °F) or >38 °C (100.4 °F) HR > 90 bpm RR >20/min or PaCO ₂ <32 mmHg (4.3 kPa) Acutely Altered Mental State Glucose > 7.7 mmol/L (in non-diabetic) WCC <4x10 ³ /L (<4000/mm ³), >12x10 ³ /L (>12,000/mm ³) If SIRS >2 Arterial Blood Gas Taken & Lactate Measured			
ASSESSMENT OF SEPSIS (SIRS + INFECTION) Blood Cultures Taken ANTIBIOTICS PRESCRIBED AND GIVEN TAZOCIN 4.5 g +/- GENTAMICIN 3 – 5 mg/kg i.v Early Microbiologist Consultation			
NIL BY MOUTH To be reviewed after results of investigations / senior review			
NASOGASTRIC TUBE INSERTION If vomiting			
ERECT CXR & SUPINE AXR PERFORMED			
URINE DIPSTICK & MC+S REQUESTED			
PREGNANCY TEST IN FEMALES PERFORMED β HCG in A&E, plasma β HCG all other locations			
ANALGESIA AND ANTIEMETICS PRESCRIBED			
VTE ASSESSMENT PERFORMED If appropriate TED compression stockings & prophylactic LMWH			
SENIOR CLINICIAN INFORMED Document Name & Grade			
YOU MUST ESCALATE TO SPR/ CONSULTANT WITHIN 30 MINUTES OF INITIAL ASSESSMENT IF PATIENT IS SEPTIC			
Now complete the p-possum card overleaf using 'best guess' of surgical findings to allow pre-operative estimation of mortality risk			

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P-POSSUM Mortality Predictor Score Card - Predicted values to be documented on consent forms if predicted mortality >10%

Columns below to be completed on admission

<p>Age:</p> <input type="checkbox"/> <61 <input type="checkbox"/> 61-70 <input type="checkbox"/> >70	<p>Hb:</p> <input type="checkbox"/> 13-16g/dl <input type="checkbox"/> 11.5-12.9 or 16.1-17 <input type="checkbox"/> 10-11.4 or 17.1-18 <input type="checkbox"/> <10 or >18
<p>Cardiac:</p> <input type="checkbox"/> No cardiac failure <input type="checkbox"/> Diuretic, digoxin, treatment for angina or hypertension <input type="checkbox"/> Peripheral oedema, warfarin, borderline cardiomyopathy <input type="checkbox"/> Raised JVP, cardiomegaly	<p>WCC:</p> <input type="checkbox"/> 4-10 <input type="checkbox"/> 10.1-20 Or 3.1-4 <input type="checkbox"/> >20 or <3
<p>Respiratory:</p> <input type="checkbox"/> No dyspnoea <input type="checkbox"/> Dyspnoea on exertion, mild COAD <input type="checkbox"/> Limiting dyspnoea, moderate COAD <input type="checkbox"/> Dyspnoea at rest, pulmonary fibrosis, consolidation on x-ray	<p>Urea:</p> <input type="checkbox"/> <7.6 <input type="checkbox"/> 7.6-10 <input type="checkbox"/> 10.1-15 <input type="checkbox"/> >15
<p>ECG:</p> <input type="checkbox"/> ECG normal <input type="checkbox"/> ECG: AF, rate 60-90 <input type="checkbox"/> ECG: Any other abnormal rhythm, >4/min ectopics, Q waves ST/T changes	<p>Na:</p> <input type="checkbox"/> >135 <input type="checkbox"/> 131-135 <input type="checkbox"/> 126-130 <input type="checkbox"/> <126
<p>SBP:</p> <input type="checkbox"/> 110-130mmHg <input type="checkbox"/> 100-109 or 131-170 <input type="checkbox"/> >170 or 90-99 <input type="checkbox"/> <90	<p>K:</p> <input type="checkbox"/> 3.5-5 <input type="checkbox"/> 3.2-3.4 Or 5.1-5.3 <input type="checkbox"/> 2.9-3.1 or 5.4-5.9 <input type="checkbox"/> <2.9 Or >5.9
<p>HR:</p> <input type="checkbox"/> 50-80 <input type="checkbox"/> 40-49 or 81-100 <input type="checkbox"/> 101-120 <input type="checkbox"/> <40 or >120	<p>GCS:</p> <input type="checkbox"/> 15 <input type="checkbox"/> 12-14 <input type="checkbox"/> 9-11 <input type="checkbox"/> <9

Columns below to be completed at time of senior review pre-op

<p>Operative severity</p> <input type="checkbox"/> Minor <input type="checkbox"/> Moderate <input type="checkbox"/> Major <input type="checkbox"/> Complex major	<p>Peritoneal soiling:</p> <input type="checkbox"/> No soiling <input type="checkbox"/> Minor soiling <input type="checkbox"/> Local pus <input type="checkbox"/> Free bowel content, pus, blood
<p>Multiple procedures:</p> <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> >2	<p>Presence of malignancy:</p> <input type="checkbox"/> No malignancy <input type="checkbox"/> Primary malignancy <input type="checkbox"/> Malignancy & nodal mets <input type="checkbox"/> Malignancy & distal mets
<p>Total blood loss:</p> <input type="checkbox"/> <100ml <input type="checkbox"/> 101-500 <input type="checkbox"/> 501-999 <input type="checkbox"/> >1000	<p>Mode of surgery:</p> <input type="checkbox"/> Elective <input type="checkbox"/> Urgent/emergency <input type="checkbox"/> Emergency (within 2 hours)

Data to be entered into P POSSUM Calculator via the featured link 'Calculate P POSSUM Score' on the trust intranet homepage

Predicted Mortality (%) pre-op _____ end of surgery _____

Predicted Morbidity (%) pre-op _____ end of surgery _____

Operation performed: _____

Surgeon completing form: _____

Signature: _____

Date: _____

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