Tayside Acute Care Guide

Contents

BY PAUL FETTES

This guide is aimed at medical students and junior doctors to enable them to know what to do in an acute situation. It is the culmination of a lot of work by a lot of people. It is designed for use in Tayside and has many specific protocols and contact numbers for that reason, but many of the approaches described are generic and it will have much wider application.

Please use this guide with care and a healthy dose of common sense. It should not be relied upon to replace clinical knowlege or experience and the first thing you should do in many of the situations is call for senior help.

Your feedback is vital to the development of this guide. Please contact me via the feedback page if you have any feedback, if links don't work or are out of date, if anything is missing, or if you can think of a way of improving it.

Chapter 1

Resuscitation

1.1 Advanced Life Support

In-hospital resuscitation Adult Advanced Life Support Tachycardia Bradycardia Paediatric Advanced Life Support Newborn Life Support

'Resuscitation' can be divided into 2 categories:

Peri-Arrest Patients Patients in Cardio-Respiratory Arrest It is very difficult to give one resuscitation plan which can apply to every patient. Each patient will require a tailored treatment plan for their acute insult. Broadly speaking, each critically unwell patient will need basic assessment and investigations to be performed in a bid to gain a diagnosis / differential list while a basic resuscitation is initiated and subsequently tailored as clinical / laboratory information becomes available.

Basic Principles (apply to both categories):

GET HELP IMMEDIATELY – Medical / Nursing / HAN etc

Resuscitation of a patient requires a co-ordinated team response

Follow ABCDE Approach and FREQUENTLY REASSES

A Team Leader should co-ordinate events (usually most senior member of staff) Gather information – Patient (if able), Notes, Charts, Allergy Bands, Staff on Ward Communication as a Team is VITAL During the initial phase of resuscitation, a co-ordinated assessment of ABCDE must occur efficiently with each member of the team appointed to a system(s) or tasks. Often assessments and interventions can be carried synchronously with one person assessing and another attaching monitoring, cannulating and taking bloods etc.

AssessmentInterventions Interventions Clinical Monitoring Airway Patent

/ Talking Additional Noises (wheeze / stridor) Airway Positioning (?Link) Adjuncts (Nasopharyngeal or Guedel) Is Definitive Airway Required? Breathing Trachea Inspection Palpation Percussion Auscultation Saturations Probe Respiratory Rate HIGH FLOW OXYGEN ABG (?Link) Consider : Nebulisers Needle Thoracocentesis Chest Drain CPAP / BiPAP Circulation Pulse BP Skin colour / Temperature Capillary Refill Heart Sounds Cardiac Monitor BP (NIBP / Arterial) ECG 2 x LARGE IV ACCESS Blood samples for Lab (See Table in Link) FLUID RESUSCIATION with 500ml boluses of NaCl 0.9%, assessing response each time Disability AVPU or GCS (See Table in Link) Pupils – Size and Reaction Posture Peripheral Neurology TREATMENT OF ABNORMAL PARAMETERS IN ABC MAY IMPROVE D Exposure Temperature BM External Signs of Injury Environmental Clues Tympanic / Core Temperature BM Stick +/- Ketone Stick Antibiotics Glucose Bolus / Glucagon REMEMBER TO CONTINUALY REASSES ABCDE AFTER EACH INTERVENTION OR IF ANYTHING CHANGES

Following the basic principles above will allow rapid assessment and stabilisation of the critically ill patient whilst examination and investigations give you an educated differential diagnosis list. There are many acute medical and surgical presentations which shall be covered in the coming chapters.

With all critically unwell patients, consideration of escalation of level of care should be considered. This could be to Coronary Care, High Dependency Unit (Medical or Surgical) or even Intensive Care. The decision to escalate should be made by the most senior members of the team present, bearing in mind that a ceiling of treatment may need to be considered.

The following criteria may guide when it is appropriate to consider referral to the Intensive Care Unit:

Links SEWS Shock Massive Transfusion Code Red AVPU or GCS

AVPU A – Alert and Communicating V – Responds only to Voice P – Responds only to Pain U – Unresponsive

GCS Score MINIMUM 3 to MAXIMUM 15

E 4 Eyes open spontaneously E 3 Eyes open to Voice E 2 Eyes open to Pain E 1 No opening of the eyes

M 6 Obeys Commands M 5 Localises to Stimulus M 4 Flexes to Painful Stimulus M 3 Abnormal Flexion to Pain M 2 Extends to Painful Stimulus M 1 No Motor Response

V 5 Orientated Speech V 4 Confused content of Speech V 3 Inappropriate Speech V 2 Incomprehensible Speech V 1 No Vocal Response

Even programme where tick boxes and generates number

Blood Samples for Lab Selected from ICE menu – Think about:

FBC, Co-agulation Screen / INR U+E's, Calcium, Magnesium, LFT's, CRP, Amylase, Troponin Lactate, Glucose Group and Save, Cross Match Blood Cultures – Peripheral and Central

ATOMFC Acronym for Life-Threatening Airway Insults

A – Airway Loss T – Tension Pneumothorax O – Open Pneumothorax M – Massive Haemothorax F – Flail Chest C – Cardiac Tamponade

Advanced Life Support Code Red Major Incident / Mass Casualty Incident

1.2 Major Incident

1.3 Haemodynamically Unstable Polytrauma (Code Red)

1.4 Adult Massive Haemorrhage Policy

1.5 Reversing oral anticoagulants in massive haemorrhage

Chapter 2

Airway Problems

2.1 Emergency Contacts

2.2 Airway Assessment

2.3 Threaten the Airway

2.4 ENT Emergencies

Chapter 3

Breathing

Chapter 4

Cardiology and Vascular

Cardiology and Vascular Cardiology Acute pulmonary oedema Artrial Fibrillation Management Management of device patients Optimal Reperfusion Therapy (AMU) Optimal Reperfusion Therapy (PRI) Shock and Sepsis Emergency Contact Numbers Definition of shock General approach to shock Cardiogenic Shock Severe Sepsis & Septic Shock Hypovolaemic Shock Anaphylactic Shock SEPSIS Six Bundle Antibiotic Man Vascular Acute Limb Ischaemia Acute Thoracic Aortic Dissection Ruptured Abdominal Aortic Aneurysm Vascular Antibiotic Policy Adult Massive Haemorrhage Policy Reversing oral anticoagulants in massive haemorrhage Fresh Frozen Plasma (FFP) Cryo Guideline Platelet Transfusion Guideline

Chapter 5

Neurology / MFE

Meningitis Management of Acute Stroke Management of Epileptic Seizure Suspected Spinal Cord Compression Seizures in a Known Epileptic Delirium Dysphagia

Chapter 6

Renal & Endocrine

Review Medication Urinary tract infection Metabolic acidosis Recognition of AKI AKI Guidelines Management of contrast-induced nephropathy DKA HHS Hypoglycaemia Hyperkalaemia Hypokalaemia Hyponatraemia Hypocalcaemia Addisonian crisis Thyrotoxicosis Phaeochromocytoma

Chapter 7

Obstetrics & Gynaecological

Obstetric Emergency Contacts Ante-partum Haemorrhage (APH) Post Partum Haemorrhage (PPH) Severe Preeclampsia / Eclampsia Sepsis in Obstetrics Shoulder Dystocia Maternal Collapse Cord Prolapse Breech in Labour Uterine Inversion

Chapter 8

Psychiatric Emergencies

Introduction Contacts Psychiatric Assessment Common Presentations Deliberate self-harm / Attempted Suicide Schizophrenia Depression Drugs and Alcohol Delirium Mental Health Act Additional Information

Chapter 9

Surgical

General / Trauma Surgery by Justyna Szczachor & Aaron Quyn

Acute Pancreatitis Assessment of severity Management of gallstones in gallstone pancreatitis Abdominal trauma Blunt abdominal trauma Penetrating abdominal trauma Thoracic trauma Rib fractures Peritonitis Significant Lower GI Bleed Massive Acute Rectal Bleeding Vascular Surgery by Stuart Suttie ENT Surgery by Stephen Jones Contacts Epistaxis Orbital Cellulitis Throat Sore Throat Quinsy Glandular Fever Epiglottitis / Supraglottitis Stridor Post-Tonsillectomy Haemorrhage

Chapter 10

Pain

by Mark Henderson

Pain Key Contacts Background Information Types of pain How to assess a patient in pain Management of acute pain Common analgesics for use in adult patients Non-opioid analgesics Common opioid analgesics Opioid titration and Post-operative nausea guideline Guidelines for opioid use Opioid conversion Approximate opioid equivalence chart Managing opioid side effects Opioid toxicity Excessive sedation and respiratory arrest Itch Constipation Other analgesics and adjuvant therapies Management of neuropathic pain Patient Controlled Analgesia Setting up a PCA PCA Prescription PCA Pit-falls PCA Troubleshooting PCA Troubleshooting Algorithm PCA Morphine step down Epidural analgesia Background information Complications Common problems Hypotension Inadequate analgesia High sensory block Dense motor block Leaking epidural Epidural disconnection Epidural falling out Urinary retention Evolution of other medical problems How to assess a patient with an epidural Resources and further reading

Chapter 11

Death

by Justyna Szczachor, Iain Kennedy & Karen Pearson

Useful Contacts Deaths of Patients Confirming Death Breaking Bad News Documenting Death Coping with death

Chapter 12

Poisons

by Gareth Patton

TOXBASE

Antidotes Background Decontamination Elimination Management Resources Summary

Chapter 13

Major Incident

Haemodynamically Unstable Polytrauma (Code Red) Patient process Massive Transfusion/Blood Loss Algorithm Adult Massive Haemorrhage Policy Platelet Transfusion Guideline Reversing oral anticoagulants in massive haemorrhage Fresh Frozen Plasma (FFP) Cryo Guideline

Chapter 14

Practical Procedures

by Karen Pearson

General Tips Access & invasive monitoring Difficult Access (including Femoral Stab) Arterial line insertion Central line insertion Samples for Investigation Pleural tap/needle thoracocentesis Ascitic tap/drain insertion Lumbar puntcure Respiratory Chest drain insertion Other Urethral Catheterisation Nasogastric tube insertion Resources

Chapter 15

Calculations

Chapter 16

Paediatrics

Emergency Contacts Anaesthetic and Transfer Cardiovascular Cardiac Arrest Arrhythmia Bradycardia Algorithm SVT Algorithm Ventricular Tachycardia Algorithm Burns Management Fluid Resuscitation Paediatric Endocrine Adrenal Crises DKA Hypoglycaemia Infectious Diseases Meningococcal Disease Management Paediatric Lumbar Puncture Paediatric Neurology Status Epilepticus Algorithm Opthalmology Orbital Cellulitis Management Respiratory Acute Athsma Exacerbation Algorithm Anaphlaxis Algorithm Bronchiolitis Management Upper Airway Obstruction Algorithm Viral Croup Management

Chapter 17

Infection

Tayside Formulary

Antibiotic Man

Chapter 18

Feedback

Your feedback is vital to the development of this guide. Please contact us if links don't work or are out of date, if anything is missing and needs to be added, or if you can think of any other way of improving it below. Thank you.

Chapter 19

Credits

Chris Kennedy, TILT setup platform and website.

Andrew Melvin has contributed to the editing, design and content of this site.

Kirsty McNeil has provided highly imaginative illustrations for many of the sections.

Jessica Thompson did the wonderful drawings of aortic dissection in the vascular surgery section.

Christopher McCann developed App on iOS and Android.