

# ***Management of Common Medical Conditions in General Medicine Ward***

***Created by:***

***Dr. Prithwiraj Maiti***

***MBBS (WBMC)***

***House Physician, Dept. of General Medicine***

***R.G.Kar Medical College***

***Kolkata, India***

***Email: prithwiraj2009@yahoo.in***

## ***Resources used:***

- 1. API journals***
- 2. PubMed central indexed journals***
- 3. Medscape***
- 4. Other journals and articles.***

***Disclaimer: Although all directions stated in this documents are constructed based on evidence based medicine, there may be significant differences in opinion regarding management of the cases among physicians. So, every direction must be individualized as per patient profile and clinical scenario. This document may act just as a guidebook to write direction in medicine ward.***

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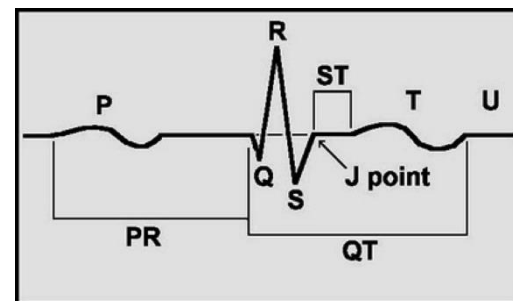
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## CARDIOVASCULAR SYSTEM

### STEMI

#### Definition:

STEMI is defined as **new ST elevation at the J point** in at least 2 contiguous leads of  $\geq 2$  mm in men and  $\geq 1.5$  mm in women in leads V2-V3 and/or  $\geq 1$  mm in other contiguous limb leads.



#### Note:

STEMI shows ST segment elevation in ECG (due to full thickness injury of heart muscle) and later progress to a Q-wave. For this reason, it is also called a Q-wave myocardial infarction (QWMI). The ultimate ECG findings of STEMI are *ST-segment elevation, pathological Q-wave formation and T-wave inversion*.

#### Direction:

1. Salt restricted diet
2. Moist oxygen inhalation (if needed)
3. T. Aspirin (75) 4 tab STAT and 1 tab OD  $\times$  Cont.
4. T. Clopedogrel (75) 4 tab STAT and 1 tab OD  $\times$  Cont.
5. T. Atorvastatin (40) 2 tab STAT and 1 tab OD  $\times$  Cont.
6. T. Ramipril (2.5) 1 tab OD  $\times$  Cont.
7. T. Nitrocontin (2.6) 1 tab BD (8 AM & 4 PM)  $\times$  Cont.
8. T. Metoprolol (25)  $\frac{1}{2}$  tab BD  $\times$  Cont. [If BP is low, avoid it]
9. T. Alprazolam (0.5) 1 tab OD HS  $\times$  Cont.
10. Inj. Pantoprazole (40) IV BD  $\times$  Cont.
11. Inj. Ondansetron (4) IV TDS  $\times$  Cont.

#### 12. Thrombolysis:

Inj. Streptokinase 1.5 million units to be diluted in 100 ml NS and to be given over 30-45 min

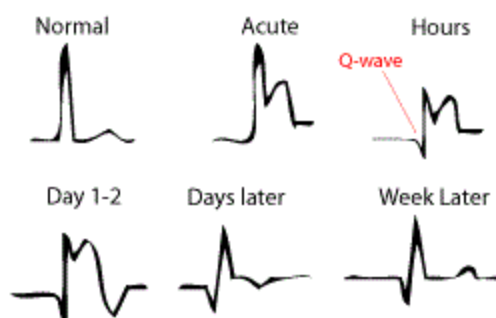
**Note:** Thrombolysis in acute STEMI is done usually within 12 hours of onset of symptoms and **only if there is no pathological Q wave**.

**OR,**

Inj. Tenecteplase (available via special indent only) IV bolus STAT over 5 seconds

Body weight (kg)	Amount of Tenecteplase powder in mg	Amount of reconstituted solution in ml
<60	30	6 ml
60-70	35	7 ml
>70	40	8 ml

The most common complication encountered during Tenecteplase therapy is bleeding. Should serious bleeding (not controlled by local pressure) occur, any concomitant heparin or antiplatelet agents should be discontinued immediately



Absolute contraindications for fibrinolytic use in STEMI:

- ✓ Prior intracranial hemorrhage (ICH)
- ✓ Known structural cerebral vascular lesion
- ✓ Known malignant intracranial neoplasm
- ✓ Ischemic stroke within 3 months
- ✓ Suspected aortic dissection
- ✓ Active bleeding or bleeding diathesis (excluding menses)
- ✓ Significant closed head trauma or facial trauma within 3 months
- ✓ Intracranial or intraspinal surgery within 2 months
- ✓ Severe uncontrolled hypertension (unresponsive to emergency therapy)
- ✓ For streptokinase, prior treatment within the previous 6 months.

13. Inj. Enoxaparin (60 U) SC BD × Cont.

[If thrombolysis is done, start Enoxaparin at least 30 min after thrombolysis, preferably from the next day]

14. Syrup Lactulose 3 TSF OD HS × Cont.

Plan:

1. RB

2. ECG 12 lead
3. Trop T
4. Date for echocardiography
5. Cardiology referral.

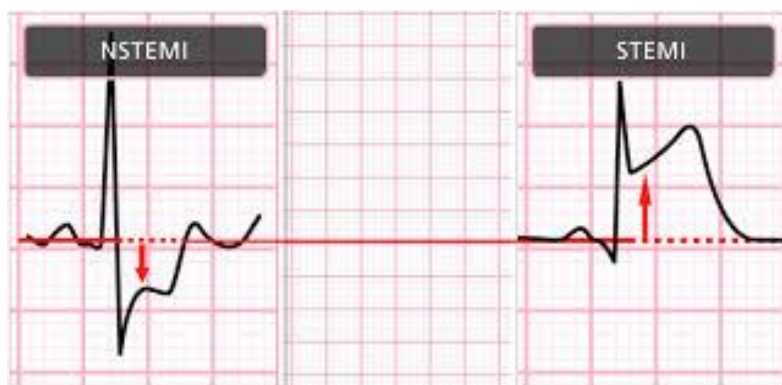
### NSTEMI

Note: The usual ECG findings of NSTEMI are ST-segment depression or T-wave inversion. NSTEMI does not show ST segment elevation in ECG (due to partial thickness injury of heart muscle) and later does not progress to a Q-wave. For this reason, it is also called a non-Q-wave myocardial infarction (NQMI).

Direction:

1. Salt restricted diet
2. Moist oxygen inhalation (if needed)
3. T. Aspirin (75) 4 tab STAT and 1 tab OD × Cont.
4. T. Clopedogrel (75) 4 tab STAT and 1 tab OD × Cont.
5. T. Atorvastatin (40) 2 tab STAT and 1 tab OD × Cont.
6. T. Ramipril (2.5) 1 tab OD × Cont.
7. T. Nitrocontin (2.6) 1 tab BD (8 AM & 3 PM) × Cont.
8. T. Metoprolol (25) ½ tab BD × Cont. [If BP is low, avoid it]
9. T. Alprazolam (0.5) 1 tab OD HS × Cont.
10. Inj. Pantoprazole (40) IV BD × Cont.
11. Inj. Ondansetron (4) IV TDS × Cont.
12. Inj. Enoxaparin (60 U) SC BD × Cont.
13. Syrup Lactulose 3 TSF OD HS × Cont.

**ADD Inj. Morphine (10 mg/ml)  
to be diluted in 5 ml NS & to be  
given over 5 min (if pain is not  
controlled).**



Plan:

1. RB
2. ECG 12 lead
3. Trop T
4. Date for echocardiography
5. Cardiology referral.

### Acute LVF

Patients presents with acute onset severe SOB; clinical findings are bibasal fine crepts ± gallop (3<sup>rd</sup> heart sound) ± high BP.

Note: **Always do an ECG and a Trop-T** in a case of suspected acute LVF to rule out AMI. **Always note the BP before initiating treatment.**

Direction:

1. Salt restricted diet
2. Daily water intake <1.5 liter/day
3. Propped up position
4. Moist oxygen inhalation
5. Nebulization with Levo-salbutamol (Levolin) 4 hourly
6. Inj. Lasix 2-3 amp IV STAT and 2 amp IV TDS × Cont.  
[Always decide the dose of Lasix after measuring the BP]
7. Inj. Nitroglycerin 1 amp in 500 ml NS to be given in 15 microdrops/ min  
[Only if BP is sufficiently high; monitor BP every 4 hourly]
8. Inj. Morphine 1 amp to be diluted in 10 ml NS and to be given slowly over 10 minutes (Give only if SpO2 is near normal as it may cause respiratory depression if given while on severe respiratory distress with low SpO2)
9. Inj. Pantoprazole (40) IV BD × Cont.
10. Inj. Ondansetron (4) IV TDS × Cont.
11. Syrup Lactulose 3 TSF OD HS × Cont.
12. An antibiotic may be added (Co-amoxiclav/ Azithromycin) if associated infection is suspected.

**Note: In case of cardiogenic shock (low/ unrecordable BP/ pulse), administer Noradrenaline (4 ampule in 100 ml NS in 15 microdrops/min) and once getting feeble pulse, merely recordable BP; maintain it with Dopamine (2 ampule in 100 ml NS in 15 microdrops/ min).**

Plan:

1. ECG 12 lead
2. Trop-T
3. RB
4. An ABG may be done (in selected/ doubtful cases)
5. CXR PA view (may be planned after stabilization to rule out infective cause)
6. Echocardiography (Later on).

#### Acute decompensation of chronic right heart failure

Patients usually presents with bilateral pitting edema + SOB ± raised JVP ± signs of LHF ± cardiogenic shock (low/ unrecordable pulse/ BP).

Direction:

1. Salt restricted diet
2. Daily water intake <1 liter/day
3. Propped up position
4. Moist oxygen inhalation
5. Nebulization with Levo-salbutamol (Levolin) 4 hourly
6. Inj. Lasix 2 amp IV STAT and 2 amp IV TDS × Cont. [after measuring the BP]
7. In case of cardiogenic shock, administer Noradrenaline and Dopamine
8. T. Metoprolol (25) ½ tab BD × Cont.
9. Inj. Pantoprazole (40) IV BD × Cont.
10. Inj. Ondansetron (4) IV TDS × Cont.
11. Syrup Lactulose 3 TSF OD HS × Cont.

Plan:

1. RB

2. ECG 12 lead
3. Trop-T
4. Date for echocardiography (later on).

### Severe anemia + Heart failure

#### Direction:

1. Propped up position
2. Moist oxygen inhalation
3. Nebulization with Levo-salbutamol (Levolin) 4 hourly
4. Inj. Lasix 2 amp IV STAT and 2 amp IV TDS × Cont. [after measuring the BP].

#### Plan:

1. RB
2. Save 2 blood samples for sending Iron profile and Peripheral blood smear next day (**before transfusion**)
3. **Urgent PRBC requisition and transfusion.**

### Atrial fibrillation with fast ventricular rate (Patient stable)

The patient most often presents with palpitation and/ or chest discomfort.

**A diagnosis is made by feeling the pulse (irregularly irregular) and may be confirmed by ECG. A typical ECG in AF shows no P waves and an irregular ventricular rate.**

#### Direction:

1. Salt restricted diet
2. Propped up position
3. Moist O2 inhalation (if needed)
4. T. Metoprolol (25) 1 tab STAT and ½ tab BD × Cont.
5. T. Digoxin (0.25) ½ tab OD × Cont. (5 days/week)
6. T. Atorvastatin (20) 1 tab OD HS × Cont.
7. Syrup Lactulose 2 TSF OD HS × Cont.
8. In case of associated pulmonary edema causing respiratory distress:

Inj. Lasix 2 amp IV STAT and 2 amp IV TDS × Cont. [after measuring the BP].

Plan:

1. RB
2. ECG
3. Date for echocardiography
4. Cardiology referral
5. PT-INR [In non-valvular AF, the usual target INR is between 2.0 and 3.0]
6. FT4, TSH
7. Fasting lipid profile (may be planned after discharge).

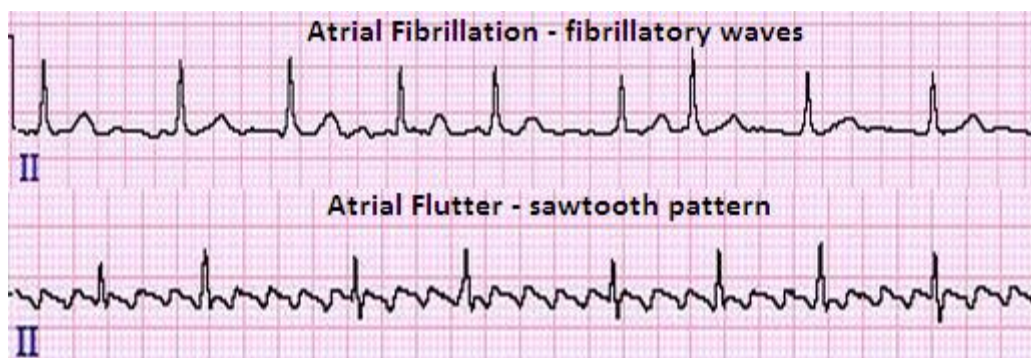
**Note: After getting PT-INR report and getting a CHADS2 scoring of >2, anticoagulation with warfarin may be started.**

Atrial fibrillation with fast ventricular rate (Patient unstable)

Direction:

All of the above + **Chemical cardioversion by:**

Inj. Amiodarone (150 mg) 1 amp slow IV over 10 minutes -> If no response -> Repeat.



Atrial flutter

**Flutter waves ("saw-tooth" pattern) are best seen in leads II, III, aVF; may be more easily spotted by turning the ECG upside down.**

### Direction:

1. Salt restricted diet
2. Propped up position
3. Moist O2 inhalation (if needed)
4. T. Metoprolol (25) 1 tab STAT and ½ tab BD × Cont.
5. T. Digoxin (0.25) ½ tab OD × Cont. (5 days/week)
6. T. Atorvastatin (20) 1 tab OD HS × Cont.
7. Syrup Lactulose 2 TSF OD HS × Cont.
8. Inj. Verapamil (2.5 mg/ml) 2 amps (total 5.0 mg) slow IV over 2 min -> No response -> May repeat the dose after 30 min.

### Plan:

1. RB
2. ECG
3. Date for echocardiography
4. Cardiology referral
5. FT4, TSH.

### Viral myocarditis

Patients usually presents days to weeks after a viral infection with cardiac symptoms like chest discomfort, palpitation, dyspnea. On examination, often tachycardia is found. ECG may show sinus tachycardia or mimic an AMI or acute pericarditis (Widespread concave ST elevation and PR depression throughout most of the limb leads and precordial leads).

**Note: Coronary arteries are normal as seen in coronary angiography.**

Often there are features of DCM (bibasal fine crepts + with SOB).

### Direction:

1. Normal diet
2. Propped up position



3. Moist O2 inhalation (in needed)
4. Inj. Lasix 2 amp IV BD/ TDS × Cont.
5. T. Metoprolol (25) ½ tab BD × Cont.
6. Serial ECG is essential in managing myocarditis. In case of significant atrial/ventricular arrhythmia, specific antiarrhythmic agents (Amiodarone/Verapamil) should be promptly given.

Plan:

1. RB
2. Serial ECG 12 lead
3. CXR PA view: To exclude any associated pericardial effusion.

## CENTRAL NERVOUS SYSTEM

### Ischemic CVA

#### Direction:

1. Salt restricted diet/ Ryle's tube feeding (if patient is unable to feed)
2. T. Aspirin (75) 1 tab OD HS × Cont.
3. T. Atorvastatin (40) 1 tab OD HS × Cont.
4. Inj. Pantoprazole (40) IV BD × Cont.
5. Inj. Ondansetron (4) IV BD × Cont.
6. If area of ischemia exceeds 1/3<sup>rd</sup> of one cerebral hemisphere/ is wide in size, add Mannitol:  
Inj. Mannitol (100) 3 bottles IV STAT -> Inj. Mannitol (100) IV TDS × Cont.
7. If there is associated seizures/ involuntary movement of muscles, add Phenytoin:  
Inj. Phenytoin (100) IV TDS × Cont.
8. Syrup Lactulose 3 TSF OD HS × Cont.

Note: If BP is high, don't add antihypertensive agent in direction immediately as it may increase the ischemic penumbra.

#### Plan:

1. RB
2. ECG 12 lead (to rule out any cardiac abnormality like AF)
3. Lipid profile
4. CT-Scan
5. FT4 and TSH.

#### NOTE:

In case of posterior circulation ischemic CVAs add anti-vertigo agents:

1. T. Vertin (24) 1 tab TDS × Cont. OR
2. Inj. Stemetil 1 amp IM BD × Cont.

## Hemorrhagic CVA/ Intracranial hemorrhage (ICH)

### Direction:

1. Salt restricted diet/ Ryle's tube feeding (if patient is unable to feed)
2. Catheterization (if needed)
3. Inj. Mannitol (100) 3 bottles IV STAT -> Inj. Mannitol (100) IV TDS × Cont.
4. If there is associated seizures/ involuntary movement of muscles, add Phenytoin:  
Inj. Phenytoin (100) IV TDS × Cont.
5. Inj. Pantoprazole (40) IV BD × Cont.
6. Inj. Ondansetron (4) IV BD × Cont.
7. Syrup Lactulose 3 TSF × Cont.
8. Add antihypertensive if BP is high: Usually start with Amlodipine: 5/10 mg OD BIF depending on the BP. In case of very high BP (> 180/110), use of IV antihypertensive (IV Enalapril/ IV Lasix) may be necessary.

### Plan:

1. RB
2. ECG 12 lead
3. CT scan
4. Lipid profile.

**Note: Always consider referring to a higher center/ a state medical college having 24 hour emergency neurosurgery facility (after consulting with your neurosurgery department).**

## Subarachnoid hemorrhage (SAH)

### Direction:

1. Salt restricted diet/ Ryle's tube feeding
2. Inj. Mannitol (100) IV TDS × Cont.  
[Note: Give STAT dose of Mannitol if SAH is new/ there is associated Intraventricular extension]
3. T. Nimodipine (30) 2 tablets 4 hourly × Cont.  
[Note: It will continue for 21 days]

4. Inj. Pantoprazole (40) IV BD × Cont.
5. Inj. Ondansetron (4) IV BD × Cont.
6. Syrup Lactulose 3 TSF × Cont.
7. Add Inj. Lasix STAT accordingly if BP is very high.

Plan:

1. RB
2. CT scan
3. PT-INR
4. MR angiography (later on)
5. Neurosurgery referral.

**Note: Always consider referring to a higher center/ a state medical college having 24 hour emergency neurosurgery facility (after consulting with your neurosurgery department).**

#### Acute spinal cord injury in case of hanging

Direction:

In case of severe cases, always write a referral to CCU and counsel the patient party about grave prognosis.

1. Immobilization of cervical spine through cervical collar
2. If presented within 8 hours of injury\*:  
Inj. Methyl-Prednisolone (2 gram) to be dissolved in 100 ml of NS and to be given in 30 minutes -> Inj. Methyl Prednisolone (2 gram) dissolved in 100 ml of NS IV TDS × Cont.

[Note that, standard dose of Methyl-Prednisolone in case of acute spinal cord injury is 30 mg/kg bolus over 15 minutes and maintenance dose 5.4 mg/kg/hr for next 24 hours]

3. Fluid imbalance to be corrected gradually because overzealous fluid administration may lead to cerebral edema  
May give: IVF DNS (500) 12 hourly × Cont.

4. Inj. Pantoprazole (40) IV TDS × Cont. [to combat steroid induced gastritis]
5. Inj. Ondansetron (4) IV BD × Cont.
6. Inj. Mannitol (100) IV TDS × Cont.
7. Inj. Phenytoin (100) IV TDS × Cont. [if convulsions occur]
8. NPM
9. **Continuous monitoring of vitals (especially BP) is necessary in severe cases (if possible in CCU). Vasopressors should be used in hypotension.**

Plan:

1. RB
2. ECG 12 lead
3. MRI cervical spine (in case of suspected fracture/ dislocation)
4. Psychiatry refer [Later on].

### Meningoencephalitis

Direction:

Start empirical therapy [antibiotic + antiviral] before diagnosis is made.

1. Normal diet/ Ryle's tube feeding (if unable to feed)
2. Inj. Ceftriaxone (2 gram) IV BD APST × Cont.
3. Inj. Vancomycin (500) in 100 ml NS IV BD × Cont.
4. Inj. Acyclovir (500) in 100 ml NS IV TDS × Cont.
5. Inj. Decadron (8) IV QDS × 4 days  
[Note: The timing of dexamethasone administration is crucial. If this agent is used, it should be administered before or with the first dose of antibacterial therapy (to counteract initial inflammatory burst consequent to antibiotic mediated bacterial killing).]
6. Inj. Pantoprazole (40) IV BD × Cont.
7. Inj. Ondansetron (4) IV BD × Cont.
8. Inj. Mannitol (100) IV TDS × Cont.
9. Inj. Phenytoin (100) IV TDS × Cont.
10. Inj. Diazepam 1 amp IM SOS [in case of convulsion]
11. Inj. DNS (500) 12 hourly × Cont. [Before starting Ryle's tube feeding].

Note: Based on LP report, change to antibiotic only/ antiviral only later on.

Plan:

1. RB
2. ECG 12 lead
3. CT scan
4. Lumbar puncture [Later on]
5. Blood culture [in selected cases only, i.e. suspected sepsis].

### Hypertensive encephalopathy

Direction:

1. Salt restricted diet/ Ryle's tube feeding (if unable to feed)
2. Use IV antihypertensive agents aggressively to lower the BP.
  - **Inj. Labetalol 4 amp IV STAT over 2 minutes: Preferred** or,
  - (Inj. Enalapril 1 amp + Inj. Lasix 2 amp) IV STAT.
3. T. Amlodipine (10) OD BBF × Cont.
4. T. Atorvastatin (40) OD HS × Cont.
5. Inj. Mannitol (100) 3 bottles IV STAT -> Inj. Mannitol (100) IV TDS × Cont.
6. Inj. Pantoprazole (40) IV BD × Cont.
7. Inj. Ondansetron (4) IV BD × Cont.

Plan:

1. RB
2. ECG 12 lead
3. CT scan
4. Lipid profile.

**Note: Always keep checking on serum Na<sup>+</sup> closely, as hyponatremia and hypertensive encephalopathy often share same clinical presentation.**

### Status epilepticus

Direction:

1. Normal diet
2. Inj. Lorazepam 1 amp IV STAT

3. Inj. Phenytoin 10 amp to be diluted in 500 ml of NS and to be infused over 4 hours -> Inj. Phenytoin (100) IV TDS × Cont.
4. Inj. Pantoprazole (40) IV BD × Cont.
5. Inj. Ondansetron (4) IV BD × Cont.

Plan:

1. RB
2. ECG 12 lead
3. CT scan -> If normal -> Plan for MRI
4. Plan EEG.

### Convulsion in a known chronic alcoholic

Direction:

Usually due to alcohol withdrawal.

1. Hepatic diet
2. Inj. Lorazepam 1 amp IV STAT
3. Inj. Valproic acid (300/ 500) in 100 ml NS IV BD× Cont. *and/or*  
Inj. Levetiracetam (500) IV BD × Cont.
6. Inj. Pantoprazole (40) IV BD × Cont.
7. Inj. Ondansetron (4) IV BD × Cont.
8. T. Librium (10) QDS × Cont.
9. Syrup Lactulose 3 TSF OD HS × Cont.

Always exclude hepatic encephalopathy.

Plan:

1. RB
2. ECG 12 lead
3. CT scan
4. LFT.

## Suspected GB syndrome

### Direction:

Before confirmation of diagnosis, management is usually conservative.

1. Normal diet
2. Inj. Pantoprazole (40) IV BD × Cont.
3. Inj. Ondansetron (4) IV BD × Cont.
4. Syrup Lactulose 3 TSF OD HS × Cont.

### Plan:

1. **URGENT NCV OF THE AFFECTED LIMBS**
2. RB
3. ECG 12 lead
4. LP [to be planned]: Albumino-cytological dissociation is characteristic (CSF finding appears 7 days after onset of symptoms)
5. Neuromedicine referral.

*After diagnosis is confirmed, IV-IG should be initiated.*

*Dosage: 400 mg/kg IV OD × 5 days.*

## Acute transverse myelitis (ATM)

**Note:** GB syndrome can be distinguished from ATM because it does not localize to a specific spinal segment.

### Direction:

1. Normal diet
2. Inj. Methyl-Prednisolone (1 gram) dissolved in 100 ml NS IV OD × Cont.  
[Duration: 3-5 days depending upon the outcome]
3. Inj. Pantoprazole (40) IV BD × Cont.
4. Inj. Ondansetron (4) IV BD × Cont.
5. Syrup Lactulose 3 TSF OD HS × Cont.

### Plan:

1. MRI Lumbosacral spine with screening of cervical and thoracic spines

2. LP and CSF study
3. Neuromedicine referral for further evaluation.

## GI SYSTEM

### Alcohol intoxication

#### Direction:

1. IVF D5:DNS 1:1 8 hourly
2. Inj. MVI 1 ampule in each alternate bottle of IVF
3. Inj. Pantoprazole (40) IV BD × Cont.
4. Inj. Ondansetron (4) IV BD × Cont.

#### Plan:

In doubtful cases, consider doing a *urinary TOX-screen* (when suspecting another associated intoxication) and a CT scan (when suspecting a CNS condition/ CVA).

Plan for discharge on next day.

### Alcohol withdrawal

#### Note:

**Always exclude other possible conditions before coming to a confirmatory diagnosis of alcohol withdrawal. For this purpose, a NCCT brain and blood tests (RB and LFT) may be necessary. Carefully enquire and note the last date of taking alcohol in BHT.**

#### Direction:

1. T. Librium (Chlordiazepoxide) 10 mg 1 tab QDS × Cont.
2. Inj. Diazepam 1 amp IM/ Inj. Lorazepam 1 amp IV SOS
3. Add Inj. Valproate (300/500) or Inj. Levetiracetam (500) in case of recurrent convulsions
4. Inj. MVI/ Inj. Thiamine 1 amp dissolved in 10 ml NS/DNS slow IV OD× Cont.
5. Inj. Pantoprazole (40) IV BD × Cont.
6. Inj. Ondansetron (4) IV BD × Cont.

#### Plan:

1. RB
2. CT scan (in doubtful cases)

3. LFT (later on).

### Acute pancreatitis

#### Direction:

1. NPM
2. Inj. IVF D5:DNS 1:1 6-8 hourly
3. Inj. Pantoprazole (40) IV BD × Cont.
4. Inj. Ondansetron (4) IV BD × Cont.
5. Inj. Drotin 1 amp IV BD × Cont.
6. Inj. Tramadol 1 amp IM SOS (in case of severe abdominal pain only)
7. IV antibiotics:
  - a. Routine cases: Inj. Ceftriaxone (1 gm) IV BD APST × Cont.
  - b. In case of suspected/ proven necrotizing pancreatitis:  
 Inj. Imipenem-Cilastatin (500) IV TDS × Cont. OR  
 Inj. Meropenem (1 gm) IV TDS × Cont.

#### Plan:

1. RB
2. Serum amylase + Serum lipase
3. LFT [ALT>150 is suggestive of gallstone pancreatitis]
4. USG whole abdomen
5. CE-CT whole abdomen (if USG already done)
6. CRP

#### After getting the Amylase-Lipase report

7. Serum Calcium
8. LDH
9. ± Fasting lipid profile.

Can be planned for later to rule out hypercalcemia and hyperlipidemia as potential cause of pancreatitis

**Note: On discharge paper, give Pancreatic enzymes for at least 1 week.**

### Decompensated chronic liver disease

#### Direction:

1. Hepatic diet/ Bland diet
2. Inj. Lasix\* 2 amp IV TDS × Cont.
3. T. Aldactone\* (25/ 50/ 100) 1 tab OD × Cont. [Dose depends upon the degree of accumulation of fluid in body; i.e. ascites/ pedal edema]  
**\*Always rule out hepatic encephalopathy before administering diuretics.**
4. Inj. Cefotaxime (1 gm) IV TDS × Cont.
5. T. Rifaximine (550) 1 tab BD × Cont.
6. Inj. Pantoprazole (40) IV BD × Cont.
7. Inj. Ondansetron (4) IV BD × Cont.
8. Syrup Lactulose 3 TSF OD HS × Cont.
9. T. Multivitamin 1 tab OD × Cont.

Plan:

In both males and females:

1. RB
2. LFT
3. HbSAg
4. Anti-HCV
5. PT-INR
6. USG whole abdomen
7. Ascitic fluid tap: Protein, Sugar, Cell type, Cell count, LDH, ADA.

In females the following special tests should be included:

1. Ascitic fluid for M cell block (to look for malignant cells)
2. Serum CA-125.

**Note:** Indent albumin if hypoalbuminemia is found in LFT.

### Hepatic encephalopathy

Direction:

1. Ryle's tube feeding
2. Syrup Lactulose 3 TSF BD × Cont.
3. Lactulose enema BD × Cont.

4. IVF DNS (500) 12 hourly × Cont.
5. Inj. MVI in each alternate bottle of IVF
6. Inj. Cefotaxime (1 gm) IV TDS × Cont.
7. T. Rifaximine (550) 1 tab BD × Cont.

Plan:

1. RB
2. LFT
3. HbSAg
4. Anti-HCV
5. PT-INR
6. USG whole abdomen
7. Upper GI endoscopy.

Hematemesis ± Melena

Direction:

1. NPM
2. IVF NS:DNS 1:1 8 hourly
3. Inj. Pantoprazole (40) 2 amp in every bottle of NS
4. Inj. MVI 1 amp in each bottle of DNS
5. Inj. Terlipressin (2 amp) IV STAT -> 1 amp IV TDS × Cont.
6. Inj. Ondansetron (4) IV TDS × Cont.
7. Inj. Cefotaxime (1 gm) IV TDS × Cont.
8. Inj. Vitamin K IV OD × Cont. (should be given after having a look on PT-INR)
9. Inform SOS.

Plan:

1. RB
2. **PRBC requisition**
3. Upper GI endoscopy
4. PT-INR
5. USG whole abdomen.

### Jaundice under evaluation

It is essentially an outdoor treatment; but sometimes patients get admitted.

Direction:

1. Bland diet
2. IVF NS:DNS 1:1 8 hourly [-----→ try to reduce the amount of fluid gradually]
3. Inj. MVI 1 amp in each alternate bottle of DNS
4. Inj. Pantoprazole (40) IV BD × Cont.
5. T. UDCA (Urso-deoxy-cholic-acid) [300 mg] TDS × Cont.
6. Syrup Lactulose 3 TSF OD HS × Cont.

Plan:

1. RB
2. LFT
3. Hepatitis profile: Anti-HAV IgM + HbSAg + Anti-HCV [ $\pm$  Anti-HEV IgM]
4. USG whole abdomen.

### Acute gastroenteritis (AGE)

It is essentially an outdoor treatment; but sometimes patients get admitted.

Direction:

1. Bland diet
2. Plenty of ORS to take
3. IVF NS:DNS 1:1 6 or 8 hourly [depending upon the degree of volume loss]
4. Inj. Ceftriaxone (1 gm) IV BD APST× Cont.
5. Inj. Metrogyl (100 ml: 400 mg) IV TDS × Cont.
6. Inj. Pantoprazole (40) IV BD × Cont.
7. Inj. Ondansetron (4) IV TDS × Cont.

**Note:**

**In case of suspected GI sepsis, change antibiotic to Meropenem/ Piperacillin-Tazobactam.**

Plan:

1. RB
2. ? Stool for OPC
3. Discharge in stable condition.

## Urinary System

### UTI

#### Direction:

1. Normal diet
2. Plenty of water to take: 3-4 liters/ day
3. T. PCM (650) TDS × Cont. and 1 tab SOS  
Infusion PCM IV SOS (if needed in high grade fever)
4. Inj. Ceftriaxone (1 gm) IV BD APST × Cont. or,  
Inj. Levofloxacin (500) IV OD × Cont.

#### Note:

Change Ceftriaxone to Inj. Piperacillin-Tazobactam (4.5 gm in 100 ml NS) IV TDS × Cont. [*in case of suspected urosepsis*]

5. Inj. Pantoprazole (40) IV BD × Cont.
6. Inj. Ondansetron (4) IV TDS × Cont.

#### Plan:

1. RB
2. Urine for RE/ ME
3. Urine for culture and sensitivity [*in selected/ recurrent cases only*]
4. USG whole abdomen [*in selected cases only*].

**Note: In complicated UTI/ urosepsis, the next phase of treatment and choice of antibiotic should be guided as per report of urine culture-sensitivity report.**

### CKD

1. Renal diet (low protein diet + avoid acidic fruits)
2. Daily water intake <1.5 liter/day
3. Inj. Lasix 2 amp IV TDS × Cont.
4. Add T. Metolazone (5 mg OD) in case of generalized edema
5. Add Ceftriaxone if an infection is suspected.

Plan:

1. RB
2. Serum ferritin/ Iron profile
3. ECG 12 lead
4. Nephrology/ Dialysis refer.

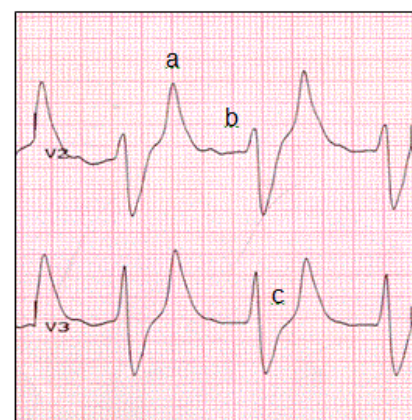
### Note: Hyperkalemia in CKD

- I. If serum K<sup>+</sup> is slightly high (5.1 – 6 mmol/L): Add Potassium binding sachet: 1 in one cup of water BD × Cont.
- II. Hyperkalemia with typical ECG features:  
All patients with a serum K<sup>+</sup> value ≥ 6.0 mmol/L should have an urgent 12-lead ECG.

Typical features of hyperkalemia are:

- a. Peaked T waves
- b. Diminished P waves
- c. Wide QRS complex.

Management: Administer **10 ml of 10% Calcium gluconate slow IV** over 2-5 minutes.



**NOTE:** IV calcium antagonises the cardiac membrane excitability thereby protecting the heart against arrhythmias. It is effective within 3 minutes as shown by an improvement in the ECG appearance (e.g. narrowing of the QRS complex). The dose should be repeated if there is no effect within 5-10 minutes. The duration of action is only 30-60 minutes, so further doses may be necessary if hyperkalemia remains uncontrolled. As IV calcium does not lower serum K<sup>+</sup>, other interventions are urgently required.

- III. Management of documented hyperkalemia with a serum K<sup>+</sup> > 6.0 mmol/L: **10 units soluble insulin with 25 gm of glucose (100 ml of 25D)**.  
Note that, the efficacy of insulin-glucose is increased if given in combination with nebulized salbutamol.

## Diabetic nephropathy

### Direction:

1. Diabetic diet
2. Daily water intake <1.5 liter/day
3. Inj. Lasix 2 amp IV TDS × Cont.
4. Inj. Ceftriaxone (1 gm) IV BD APST × Cont.
5. Control of hyperglycemia by regular insulin
6. Add T. Metolazone (5 mg OD) in case of generalized edema

### Plan:

1. RB
2. ECG 12 lead
3. Nephrology/ Dialysis refer.

## Obstructive uropathy

Prior to addressing the specific therapy for obstruction, a physician must investigate and begin treatment of the life-threatening complications of obstructive uropathy (i.e. pulmonary edema, hypovolemia, urosepsis, hyperkalemia etc.).

### Direction:

1. Catheterization
2. Daily water intake <1.5 liter/day
3. Inj. Lasix 2 amp IV TDS × Cont.
4. Inj. Ceftriaxone (1 gm) IV BD APST × Cont.
5. K-Binding sachet (1 in a cup of water) BD × Cont. [in case of hyperkalemia]
6. Syrup Lactulose 3 TSF OD HS × Cont.

### Plan:

1. RB
2. ECG 12 lead
3. USG whole abdomen
4. Urine for RE/ ME (if suspected for UTI)

5. **Urosurgery referral**

6. Nephrology/ Dialysis referral (if urea/ creatinine is high).

In case of suspected Uremic Encephalopathy:

**Always try to arrange for urgent dialysis of the patient.**

### Acute glomerulonephritis

Direction:

1. Salt restricted diet
2. Daily water intake <1.5 liter/day
3. Inj. Lasix 2 amp IV TDS × Cont.
4. Inj. Ceftriaxone (1 gm) IV BD APST × Cont.
5. T. Amlodipine (5) OD BBF × Cont.

Plan:

1. RB
2. Urine for RE and ME
3. Serum C3 and C4 [*Low C3 levels are found in almost all patients with acute PSGN; C4 levels may be slightly low*]
4. USG whole abdomen
5. CXR PA view Digital [in case of suspected streptococcal pneumonia only].

### Suspected nephrotic syndrome (Proteinuria ++)

It is essentially an outdoor case.

Plan:

1. RB
2. FBS, PPBS
3. Urine for RE and ME
4. 24 hour urinary protein excretion
5. Serum C3 and C4
6. Fasting lipid profile

7. HbSAg, Anti-HCV, HIV (I & II)
8. ASO titer, ANA
9. USG whole abdomen
10. c-ANCA and p-ANCA

**(In special cases only.** Testing for ANCA is not indicated in typical nephrotic syndrome, because that test is associated with rapidly progressive glomerulonephritis, which presents with a nephritic picture rather than one that is typically nephrotic)

11. PT-INR (if renal biopsy is planned).

## POISONINGS

### Organophosphate poisoning

#### Direction:

1. NPM
2. Gastric lavage with at least 4 liter of NS\*
3. IVF NS:DNS 1:1 8 hourly
4. Inj. Atropine (5 amp) in each bottle of NS\*\* -→ ↑ Gradually till targets of atropinization are achieved
5. Inj. Pantoprazole (40) IV BD × Cont.
6. Inj. Ondansetron (4) IV BD × Cont.
7. Inj. Pralidoxime (PAM) 2 amp (1 gm/vial: A total of 2 gm) in 100 ml of NS to be given in 20 minutes
8. Inj. Diazepam 1 amp IM SOS.

#### Plan:

1. RB
2. ECG 12 lead.

#### Special notes:

\*Gastric lavage decreases absorption by 42% if done at 20 minutes and by 16% if performed at 60 minutes.

\*\*

#### *Atropinization: Targets*

- Adequacy of atropinization
- *Mandatory targets:*
  - SBP greater than 90 mm Hg
  - Heart rate about 110/minute
  - Clear lung fields.
- *Other targets:*
  - Pupils mid position
  - Bowel sounds just present
- *Targets on subsequent days:*
  - Day 2: HR greater than 100/minute
  - Day 3: HR greater than 90/minute
  - Subsequent days: At least 80/minute.

## Cypermethrin poisoning

### Direction:

1. NPM
2. Gastric lavage (if needed)
3. IVF NS:DNS 1:1 8 hourly
4. Inj. Pantoprazole (40) IV BD × Cont.
5. Inj. Ondansetron (4) IV BD × Cont.
6. Inj. Phenytoin (100) IV TDS × Cont.

### Plan:

1. RB
2. ECG 12 lead.

## Paraquet

### **PARTY COUNSELLING ABOUT THE OUTCOME IS MANDATORY.**

### Direction:

1. NPM
2. Gastric lavage (if needed)
3. IVF NS:DNS 1:1 8 hourly
4. Inj. MVI 1 amp in each bottle of DNS
5. Inj. Pantoprazole (40) IV BD × Cont.
6. Inj. Ondansetron (4) IV BD × Cont.
7. T. Vitamin C 1 tab BD × Cont.
8. T. Vitamin E 1 tab BD × Cont.

### Plan:

1. RB
2. ECG 12 lead
3. **Dialysis refer with viral marker report (HbSAg + anti-HCV + HIV I & II) as soon as possible.**

## Benzodiazepines

### Direction:

1. NPM
2. Gastric lavage (if needed)
3. IVF NS:DNS 1:1 8 hourly
4. Inj. Pantoprazole (40) IV BD × Cont.
5. Inj. Ondansetron (4) IV BD × Cont.
6. Inj. **Flumazenil** ½ amp in 10 ml NS to be given over 1 min and rest ½ amp in 1<sup>st</sup> bottle of NS slowly over 4 hours.\*

### 1. Name of the medicinal product

---

Flumazenil 0.1 mg/ml Injection

### 2. Qualitative and quantitative composition

---

Each ml contains 0.1 mg flumazenil.

1 ampoule with 5 ml contains 0.5 mg flumazenil.

1 ampoule with 10 ml contains 1.0 mg flumazenil.

### Note:

**Give Flumazenil only to the patients in disoriented/ semiconscious state.**

### Plan:

1. RB
2. ECG 12 lead.

## Corrosive acid/ substances

### Direction:

1. NPM
2. IVF NS:DNS 1:1 8 hourly
3. Inj. Pantoprazole (2 amp) in each bottle of NS × Cont.
4. Inj. Ondansetron (4) IV TDS × Cont.

**Warning: Never do gastric lavage in case of corrosive substance poisoning.**

### Plan:

1. RB
2. ECG 12 lead
3. **ENT refer**
4. Upper GI endoscopy 6 weeks after ingestion.

## Copper sulfate

### Direction:

1. NPM (Except medications)
2. IVF NS:DNS 1:1 8 hourly
3. Inj. Pantoprazole (2 amp) in each bottle of NS  
[to prevent erosive gastropathy]
4. Inj. MVI 1 amp in each bottle of DNS
5. Inj. Ondansetron (4) IV TDS × Cont.
6. T. D-Penicillamine (500) 1 tab 6 hourly × Cont.
7. Inj. Ceftriaxone (1 gm) IV BD APST × Cont.

### Note:

Suspect methemoglobinemia if there is a low peripheral saturation (SpO<sub>2</sub>) in the presence of a normal arterial saturation (in ABG) in the presence of cyanosis. If possible, methemoglobin levels should be assessed. This is treated by **IV methylene blue 2 mg/kg (in 5% dextrose)** -> Repeat if cyanosis persists beyond 1 hour. **Note that, methylene blue is contraindicated in G6PD deficiency.**

### Plan:

1. RB
2. Amylase and Lipase
3. ECG 12 lead
4. LFT
5. PRBC requisition [if Hb level falls due to copper induced hemolysis]
6. **Dialysis refer with viral marker report (HbSAg + anti-HCV + HIV I & II) as soon as possible\***
7. CCU refer if aspiration pneumonia develops.

\* The recovery of renal function following copper sulfate ingestion is observed to be slow and incomplete. It takes a long time and multiple dialysis before the patient becomes independent of dialysis.

## Paracetamol

### Direction:

1. NPM (Except medications)
2. Inj. Pantoprazole (40) IV BD × Cont.
3. Inj. Ondansetron (4) IV BD × Cont.
4. Oral NAC:

Oral NAC (600 mg) is the drug of choice for the treatment of acetaminophen overdose. The FDA-approved dosage regimen for oral NAC starts with a loading dose of 140 mg/kg, followed by 17 doses, each at 70 mg/kg, given every 4 hours. The total duration of the treatment course is 72 hours.

Alternative and simplified regimen (for a 60 kg body weight patient):

Oral NAC (600) 14 tab STAT-> 7 tab every 4 hour × Cont.

### Note:

IV N-acetyl cysteine (NAC):

### Indications:

- Altered mental status
- GI bleeding and/or obstruction
- A history of caustic ingestion
- Potential acetaminophen toxicity in a pregnant woman
- Inability to tolerate oral NAC because of emesis refractory to proper use of antiemetic.

### Dose:

200 mg/ml inj. available in 2 ml and 5 ml ampules.

- **Loading Dose:** 150 mg/kg in 200 mL of 5D administered over 1 hr
- **Dose 2:** 50 mg/kg in 500 mL of 5D administered over 4 hr
- **Dose 3:** 100 mg/kg in 1000 mL of 5D administered over 16 hr.

### Plan:

1. RB
2. LFT

### 3. Amylase and Lipase.

## RESPIRATORY SYSTEM

Hemoptysis/ chronic cough under evaluation

Direction:

1. Normal diet
2. T. PCM (650) 1 tab SOS
3. Inj. (Amoxicillin + Clavulanic acid) 1.2 gm IV TDS APST × Cont.
4. Syrup Expectorant 2 TSF TDS × Cont.

Plan:

1. RB
2. Digital CXR PA view
3. Sputum for AFB
4. Sputum for Gram stain ± C/S (in selected cases only)
5. PRBC requisition (in case of massive hemoptysis).

Significant LRTI/ LRTI + Sepsis

Direction:

1. Normal diet/ Ryle's tube feeding (if patient is unable to feed)
2. Moist O2 inhalation (if needed)
3. T. PCM (650) 1 tab TDS × Cont. and 1 tab SOS or,  
Infusion PCM BD × Cont. [in seriously ill patient unable to feed]
4. Inj. (Piperacillin + Tazobactam) 4.5 gm in 100 ml NS IV TDS × Cont.
5. Inj. Levofloxacin (500) IV OD × Cont.
6. Inj. Pantoprazole (40) IV BD × Cont.
7. Inj. Ondansetron (4) IV BD × Cont.

Plan:

1. RB
2. CRP
3. Digital CXR PA view

4. Sputum for gram stain, AFB stain  $\pm$  Culture and sensitivity (if needed)
5. ABG (if needed).

### AECOPD

#### Direction:

1. Moist O2 inhalation
2. Nebulization with Levolin 4 hourly
3. Nebulization with Duolin 6-8 hourly
4. Nebulization with Budicort 12 hourly
5. Inj. Hydrocortisone (100) 1 amp IV STAT and 1 amp IV TDS  $\times$  Cont.
6. Inj. Lasix 2 amp IV STAT and 1 amp IV BD/ TDS  $\times$  Cont. [If crepts+]
7. Inj. Pantoprazole (40) IV BD  $\times$  Cont.
8. Inj. Ondansetron (4) IV BD  $\times$  Cont.
9. Inform SOS.

#### Plan:

1. RB
2. CRP
3. Digital CXR PA view
4. ABG.

#### **Note: Correct any electrolyte imbalance as found in ABG promptly.**

1. Hyponatremia: 3% NaCl IV BD/ TDS/ QDS slowly over 10 minutes  
[depending upon the Na<sup>+</sup> level]
2. Hypokalemia: Syrup Potclor 2 TSF/ 3TSF TDS or Inj. KCL 1 amp in 500 ml NS  
[depending upon the K<sup>+</sup> level].

#### Basic calculations:

#### ***Hyponatremia***

1 liter of 3% NaCl contains 513 mmol of Na<sup>+</sup>

Normal serum Na<sup>+</sup> is: 135-145 mmol/L

Daily Na<sup>+</sup> requirement is about 2 mmol/kg.

$$\text{Na}^+ \text{ deficit} = \text{Body weight} \times [\text{Desired Na}^+ - \text{Serum Na}^+] \times \text{Sex ratio [M: 0.6 \& F: 0.5]}$$

Desired Na<sup>+</sup> = 120-125 meq/l.

Suppose we get an asymptomatic male patient of 60 Kg with a serum Na<sup>+</sup> level of 105.0 mmol/L and we want to make it 125 mmol/L. We proceed this way:

- 1) Na<sup>+</sup> deficit =  $60 \times [125 - 105] \times 0.6 = 720$  mmol
- 2) Daily Na<sup>+</sup> requirement =  $2 \times 60 = 120$  mmol
- 3) Total Na<sup>+</sup> requirement =  $720 + 120 = 840$  mmol  $\equiv$  1.64 liter of 3% NaCl.

### ***Hypokalemia***

1 amp of KCl contains 5 ml of 2 mmol/ml solution; that means a total of 10 mmol.

10 mL of KCl syrup = 20 mmol of K<sup>+</sup>

Normal level of serum K<sup>+</sup> is 3.5-5.0 mmol/L

Daily K<sup>+</sup> requirement is about 1 mmol/kg.

$$\text{K}^+ \text{ deficit} = [\text{Lower limit of K}^+ - \text{Serum K}^+] \times \text{Body weight} \times 0.4$$

Suppose we get an asymptomatic patient of 60 Kg with a serum K<sup>+</sup> level of 3.0 mmol/L. We proceed this way:

- 1) Deficit of potassium in mmol =  $(3.5 - 3.0) \times 60 \times 0.4 = 12$  mmol
- 2) Daily potassium requirement =  $1 \times 60 = 60$  mmol
- 3) Total requirement =  $12 + 60 = 72$  mmol  $\equiv$  7 amp of KCl/ d  $\equiv$  36 ml KCl syrup/d.

### AECOPD + LRTI

Direction:

1. Moist O<sub>2</sub> inhalation

2. Nebulization with Levolin 4 hourly
3. Nebulization with Duolin 6-8 hourly
4. Nebulization with Budicort 12 hourly
5. Inj. Hydrocortisone (100) 1 amp IV STAT and 1 amp IV TDS × Cont.
6. Inj. (Piperacillin + Tazobactam) 4.5 gm in 100 ml NS IV TDS × Cont.
7. Inj. Levofloxacin (500) IV OD × Cont.  
± Inj. Linezolid (600) IV BD × Cont.
8. Inj. Pantoprazole (40) IV BD × Cont.
9. Inj. Ondansetron (4) IV BD × Cont.
10. Inform SOS.

**Plan:**

1. RB
2. CRP
3. Digital CXR PA view
4. ABG
5. Sputum for gram stain ± Culture and sensitivity (if needed).

**Note:**

Respiratory distress in a known case of Bronchogenic CA is also treated as LRTI.

### Aspiration pneumonia

**Direction:**

1. Moist O2 inhalation
2. Nebulization with Levolin 4 hourly
3. Nebulization with Duolin 6 hourly
4. Inj. Meropenem (1 gm) IV TDS × Cont.
5. Inj. Metrogyl (100 ml) IV TDS × Cont.
6. T.PCM (650) TDS × Cont. **or**, Infusion PCM IV BD × Cont. (if critically ill)
7. Inj. Pantoprazole (40) IV BD × Cont.
8. Inj. Ondansetron (4) IV BD × Cont.
9. Inform SOS.

Plan:

1. RB
2. CRP
3. Digital CXR PA view
4. Sputum for gram stain  $\pm$  Culture & sensitivity
5. ABG
6. **CCU refer urgently** (for mechanical ventilation).

## INFECTION

### Fever under evaluation

#### Direction:

1. Normal diet
2. T.PCM (650) TDS × Cont. and 1 tab SOS
3. Inj. Ceftriaxone (1 gm) IV BD APST × Cont.
4. Inj. Pantoprazole (40) IV BD × Cont.
5. Inj. Ondansetron (4) IV BD × Cont.

#### Plan:

1. RB
2. ECG 12 lead
3. CRP
4. If UTI is suspected: Urine RE/ ME
5. If Dengue is suspected: Dengue NS1 (day 3-4) and Dengue IgM (day 5-6)
6. If LRTI is suspected: CXR PA view Digital, Sputum for gram stain & C/S
7. If Typhoid fever is suspected: *Typhidot IgM*
8. If associated hemoptysis/ chronic cough: Sputum for AFB.

### Dengue fever

#### Direction:

1. Normal diet
2. T.PCM (650) TDS × Cont. and 1 tab SOS (if temperature > 102°F)
3. IVF NS (500) 4/6 hourly [depending upon the Volume status/ PCV]
4. Inj. MVI 1 amp in any 2 bottle of IVF in a day × Cont.
5. Inj. Pantoprazole (40) IV BD × Cont.
6. Inj. Ondansetron (4) IV TDS × Cont.

**Note:**

**In suspected Dengue shock syndrome (BP low/ not recordable); give 3 bottle of NS in jet STAT -> if still BP not recordable -> administer Noradrenaline (4 ampule in 100 ml NS in 15 microdrops/min) and once getting feeble pulse, merely recordable BP; maintain it with Dopamine (2 ampule in 100 ml NS in 15 microdrops/ min).**

## Plan:

1. RB
2. LFT (to rule out dengue hepatitis)
3. Serum Amylase-Lipase (in case of retractable abdominal pain; to rule out dengue pancreatitis)
4. Dengue NS1 (day 3-4) and Dengue IgM (day 5-6)
5. Platelet requisition (if platelet  $\leq 20000/\text{cu.mm}$ )
6. FFP requisition (in case of coagulopathy with/ without deranged LFT)
7. PRBC requisition (in case of massive bleeding).

## Typhoid fever

Although it is an OPD case, sometimes (especially when complications are suspected) got admitted. While treating in OPD, DOC is T. Cefixime (200) BD PC for 5-7 days. 2<sup>nd</sup> DOC is Azithromycin (500) OD for 5 days.

## Direction:

1. Bland diet
2. IVF NS:DNS 1:1 8 hourly
3. Inj. Ceftriaxone (1 gm) IV BD APST  $\times$  Cont.
4. T. PCM (650) 1 tab TDS  $\times$  Cont. and 1 tab SOS
5. Inj. Pantoprazole (40) IV BD  $\times$  Cont.
6. Inj. Ondansetron (4) IV TDS  $\times$  Cont.
7. Inj. Drotin 1 amp IV BD  $\times$  Cont.
8. Inform SOS.

Plan:

1. RB
2. CRP
3. Serum Amylase and Lipase
4. Typhidot IgM (It becomes positive within 2-3 days of infection)
5. USG whole abdomen (if GI complications are suspected).

### Malaria

#### *P.vivax* malaria

It is an OPD case. DOC is T. Chloroquine (Brand name: Lariago-DS) 2 tab STAT and 1 tab at 8 hour, 24 hour and 48 hour : A total of 5 tablets.

#### *P.falciparum* malaria

Direction:

1. Bland diet
2. T. PCM (650) TDS and 1 tab SOS  
Infusion PCM if temperature  $>103^{\circ}\text{F}$ .
3. IVF NS (500) 8 hourly  $\times$  Cont.
4. Inj. Artesunate 2 amp in 1<sup>st</sup> bottle of NS  
Inj. Artesunate 1 amp in 2<sup>nd</sup> bottle of NS  
Inj. Artesunate 1 amp in any 1 bottle of NS after 1<sup>st</sup> day  $\times$  Cont.  
\*1 amp of artesunate= 60 mg.
5. Inj. Pantoprazole (40) IV BD  $\times$  Cont.
6. Inj. Ondansetron (4) IV TDS  $\times$  Cont.
7. Inform SOS.

\* A loading dose of 2 mg/kg should be followed by 1 mg/kg after 4 hours and 24 hours. Thereafter a dose of 1 mg/kg should be given daily until the patient is able to tolerate oral artesunate or for a maximum of 7 days. [WHO Guidelines]

Plan:

1. RB
2. LFT

3. Serum Amylase and Lipase
4. Digital CXR PA view (if needed; i.e. in case of SOB).

**Note: In case of ARF, increase the amount of IVF and prepare for dialysis [send blood for triple serology].**

### Sepsis

In addition to conservative management, empirical choice of antibiotic depends upon the suspected/ confirmed source of sepsis. Choice of specific antibiotic depends upon culture and sensitivity report.

1. LRTI + Sepsis: (Piperacillin + Tazobactam) + Levofloxacin ± Linezolid
2. Urosepsis: (Piperacillin + Tazobactam) + Levofloxacin / Meropenem + Levofloxacin
3. Aspiration pneumonia: Meropenem + Metrogyl ± Linezolid
4. GI sepsis: Meropenem + Metrogyl ± Linezolid
5. Necrotizing pancreatitis: (Imipenem + Cilastatin)/ Meropenem.

## HEMATOPOIETIC SYSTEM

### Anemia under evaluation

Direction:

Symptomatic management.

Plan:

1. RB
2. Peripheral blood smear
3. Iron profile
4. Stool for OPC
5. Digital CXR PA view
6. USG whole abdomen
7. PRBC requisition (**only after all blood investigations are sent**).

### Generalized lymphadenopathy

Direction:

Symptomatic management.

Plan:

1. RB
2. Peripheral blood smear
3. Digital CXR PA view
4. USG whole abdomen
5. PT-INR -> Pathology refer for FNAC of a palpable lymph node
6. General surgery refer for lymph node biopsy (**only if indicated**)
7. Sputum for AFB (if TB is suspected).

## MISCELLANEOUS

### Snake bite

Immediate plan:

1. 20 min Whole blood clotting time (20WBCT)\*
2. Urine for occult blood test (OBT)

\* A few milliliters of fresh venous blood should be placed in a fresh, clean and dry glass vessel preferably test tube and left undisturbed at ambient temperature for 20 minutes. After that tube should be gently tilted to detect whether blood is still liquid and if so then blood is incoagulable. The test should be carried out every 30 minutes from admission for 3 hours and then hourly after that. (*Ideally*)

### *Hematotoxic snake bite*

If above two tests confirm hemotoxic snake bite, the direction will be following:

1. Bland diet
2. IVF NS (500) 8 hourly
3. T. PCM (650)/ T. Tramadol 1 tab SOS (for pain control)
4. Inj. **AVS** 10 amp in each bottle of NS (to be infused over 1 hour)\*\*
5. Inj. Pantoprazole (40) IV BD × Cont.
6. Inj. Ondansetron (4) IV BD × Cont.

\*\* After initial ASV dose, no additional ASV should be given until the next clotting test at 6 hours. This is due to the inability of the liver to replace clotting factors in less than 6 hours. If WBCT is still more than 20 minutes, repeat dose of 10 vials of ASV should be continued 6 hourly till coagulation is restored.

Later plan:

1. RB
2. Amylase and Lipase
3. PT, INR

4. ECG 12 lead.

**Note: Prepare for dialysis if ARF develops.**

### *Neurotoxic snake bite*

Suspect neurotoxic symptoms if there is loss of the gag reflex, failure to cough or respiratory distress.

Direction:

1. Bland diet
2. Moist O2 inhalation
3. IVF NS (500) 8 hourly
4. T. PCM (650)/ T. Tramadol 1 tab SOS (for pain control)
5. Inj. **AVS** 10 amp in each bottles of NS (to be infused over 1 hour)\*\*
6. Inj. Glycopyrrolate<sup>^</sup> (1 ml) IV STAT -> Inj. Neostigmine 1 amp IM STAT
7. Inj. Pantoprazole (40) IV BD × Cont.
8. Inj. Ondansetron (4) IV BD × Cont.

\*\* After initial ASV dose, no additional ASV should be given until the next clotting test at 6 hours. This is due to the inability of the liver to replace clotting factors in less than 6 hours. If WBCT is still more than 20 minutes, repeat dose of 10 vials of ASV should be continued 6 hourly till coagulation is restored.

<sup>^</sup> Inj. Glycopyrrolate is available in 5 ml vial in a concentration of 0.2 mg/ml. The dose of Glycopyrrolate is 0.2 mg IV; i.e. 1 ml.

Plan:

In addition to the plans of hematotoxic snake bite, **write a CCU refer for need of mechanical ventilation as soon as you diagnose a neurotoxic snake bite.**

### Scorpion bite

Usually manageable in ER.

Direction:

- i. Inj. Phenergan (Promethazine) 1 amp IM STAT
- ii. Inj. Hydrocortisone (100) IV STAT
- iii. Inj. Tetanus 0.5 ml IM STAT.

Discharge after keep in observation for 2-3 hours with/without an antibiotic course (Ex.: Coamoxiclav).

### Unknown bite

Most important thing to do is **exclude snake bite**.

Plan:

1. 20WBCT
2. Urine for OBT.

If evidence of hemotoxicity/ neurotoxicity is found, treat accordingly.

Otherwise give Tetanus and Hydrocortisone and discharge after observation for 2-3 hours.

### Hyperemesis gravidarum

Direction:

1. Bland diet
2. Inj. Pantoprazole (40) IV BD × Cont.
3. Inj. Ondansetron (4) IV BD × Cont.
4. T. (Doxylamine + Pyridoxine) 1 tab QDS × Cont.
5. IVF NS:DNS 1:1 8 hourly
6. Inj. MVI 1 amp in each alternate bottle of DNS
7. Inform SOS.

Plan:

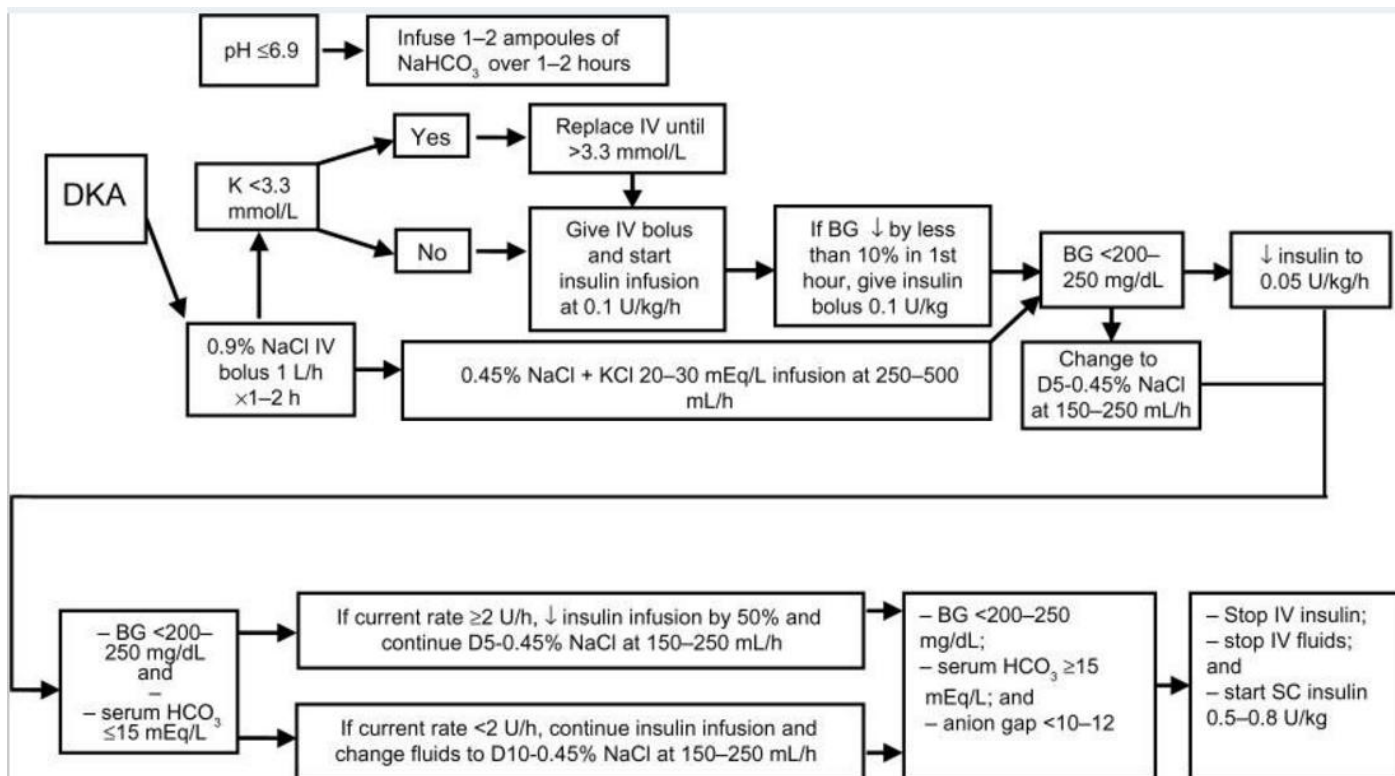
1. RB
2. Amylase and Lipase
3. Urine for RE, ME and ketone bodies
4. LFT
5. FT4 and TSH
6. USG whole abdomen.

## DKA

Initial plan:

1. Urine for ketone body
2. RB
3. ABG
4. CRP.

Latest Guidelines:



Direction:

1. IVF NS (500) 2 bottles IV STAT  
↓
2. IVF NS (500) 6 hourly × Cont.
3. Inj. Human regular insulin 30 units in each bottle of NS × Cont.
4. Inj. KCl 1 amp in each alternate bottle of NS × Cont.
5. Inj. Pantoprazole (40) IV BD × Cont.
6. Inj. Ondansetron (4) IV BD × Cont.
7. Diabetic diet.

Note:

1. Regular CBG monitoring is necessary; when CBG comes to <250 mg/dl, omit insulin temporarily, start DNS -> after CBG gets >250 mg/dl for a permissive time, change insulin to 0.05 U/Kg/H & Do another ABG -> Change to SC insulin as per guidelines.
2. **If sepsis is suspected/ proven in a patient of DKA/ uncontrolled diabetes, always start with high generation antibiotics combination like Meropenem + Teicoplanin / Linezolid.**
3. ½ NS or ½ DNS is not available in Medicine ward so we have to work with NS/ DNS.

### HONC

In case of HONC, fluid requirement is higher than DKA. Other aspects of management are similar. In HONC, we have to start with 4 bottles of NS STAT and then 1 bottle every 2-4 hourly.