



SSK

Clinical Management Protocols

Shasthyo Suroksha Karmosuchi (SSK)
Health Economics Unit
Ministry of Health & Family Welfare



Editorial Board

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Preface
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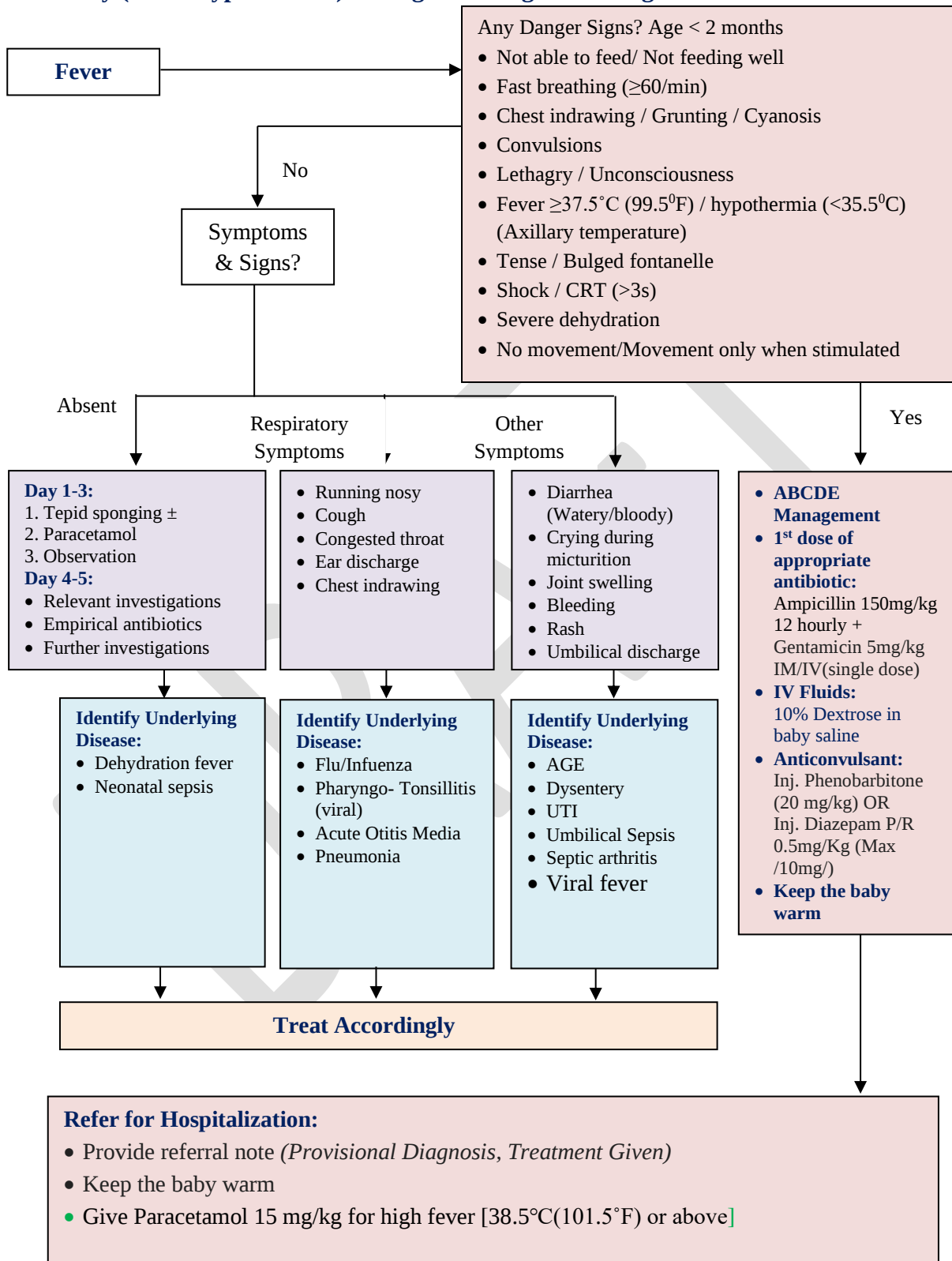
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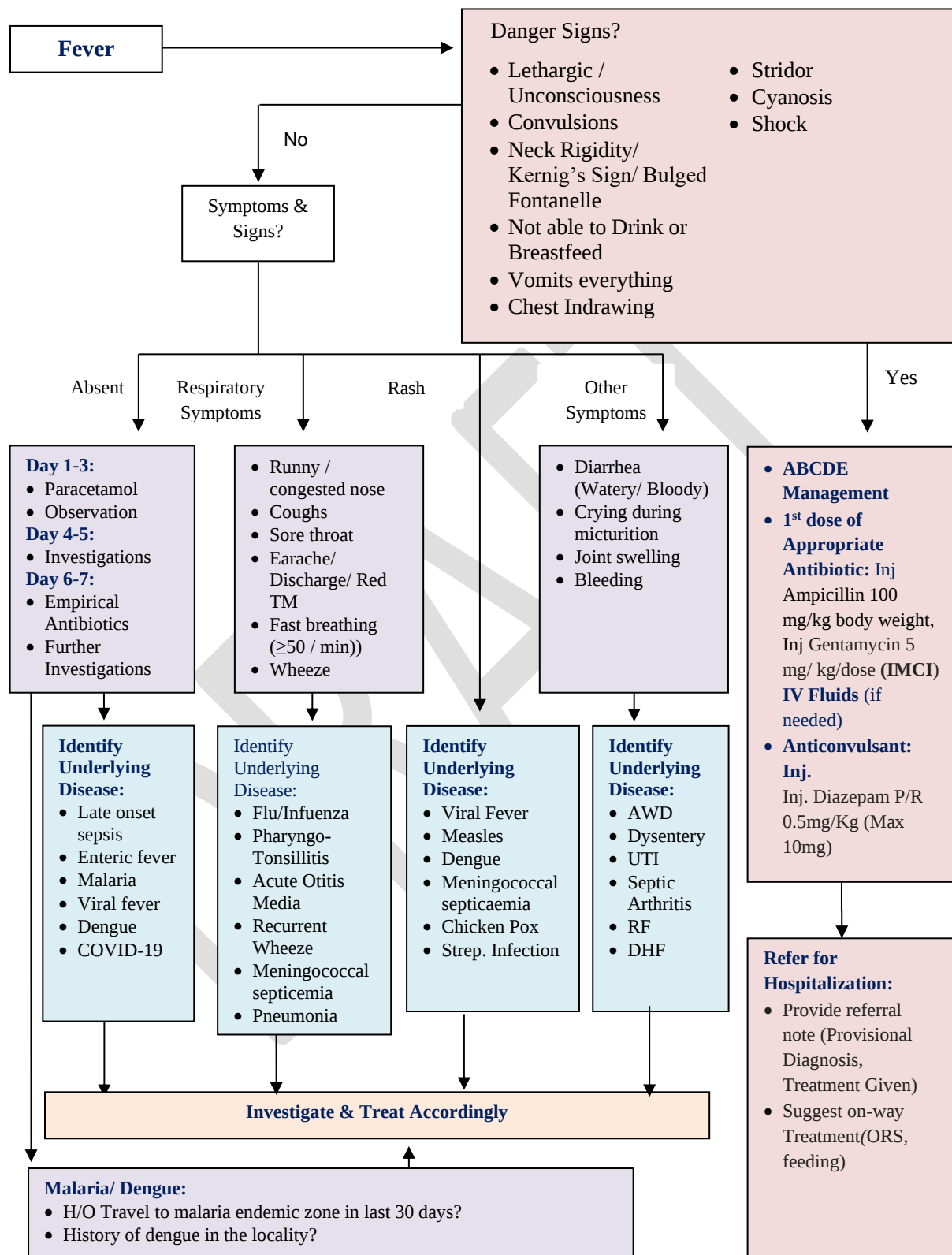
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Acute Fever

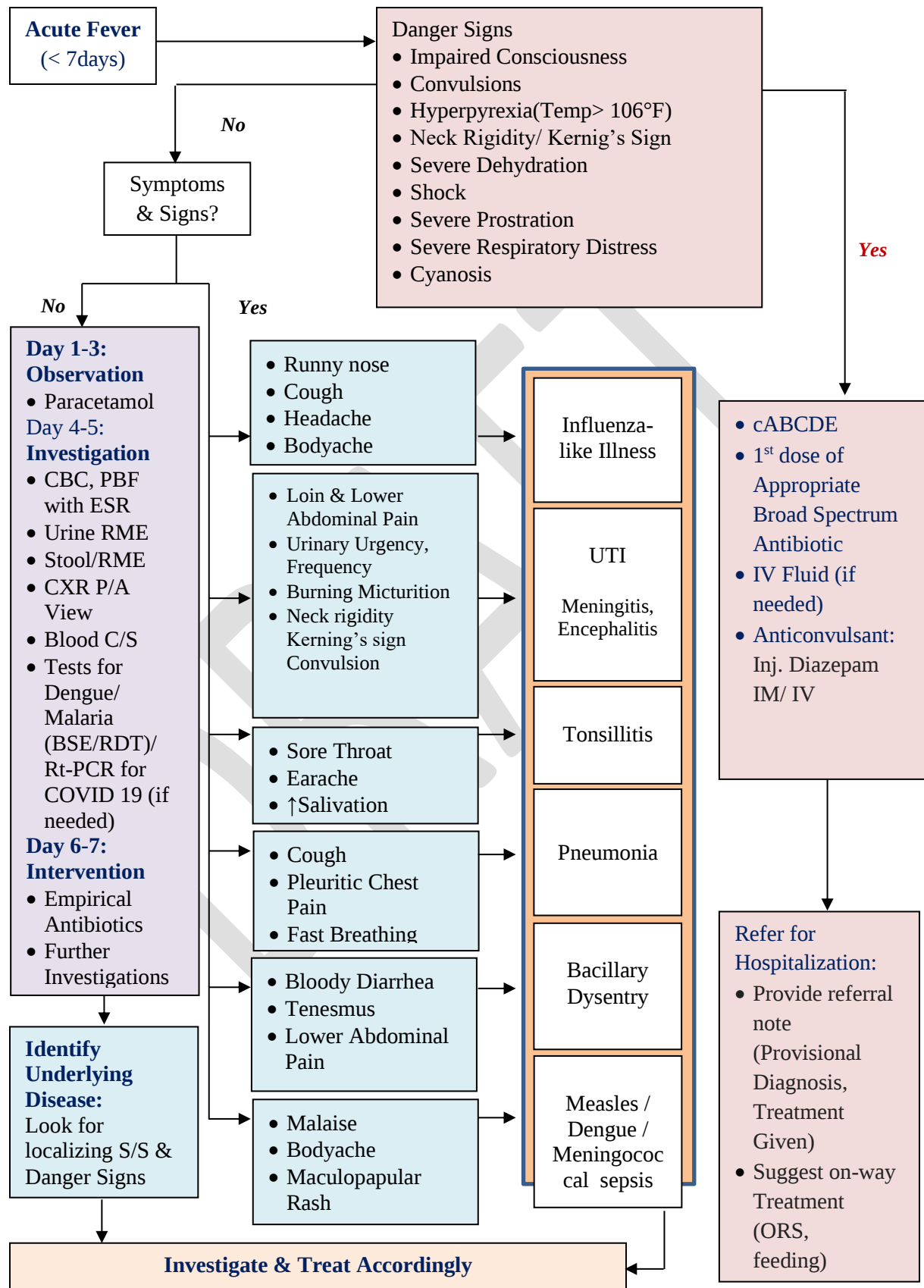
Sick baby (Fever/hypothermia) management Algorithm: Age < 2 months



Fever Management Algorithm: Age 2 months – 5years



Fever Management Algorithm: Age > 5years



Acute Malnutrition

Classification:

Moderate Acute Malnutrition (MAM): Home treatment

Severe Acute Malnutrition (SAM)

Uncomplicated SAM:

- Clinically well
- Without S/S of infection
- Retained appetite
- No needs for hospitalization

Diet: Nutritional management

Complicated SAM:

- Appetite lost
- Persistent vomiting
- Hypothermia/Fever
- Severe dehydration, Anaemia
- Poor appetite/unable to eat
- Respiratory distress, dehydration
- No therapeutic diet is available now,
- Diet as in diet MAM

According to WHO Diagnostic Criteria

Parameters	Normal	MAM	SAM
MUAC mm	≥ 125	115 to <125	<115
WHZ/WLZ	≥ -2	-3 to < -2	< -3
Bipedal oedema	Absent	Absent	Present

WHZ: Weight for height Z score; WLZ: Weight for length Z score MUAC: Mid upper arm circumference.

WHO Diagnostic Criteria of SAM: Children between 6-59 months

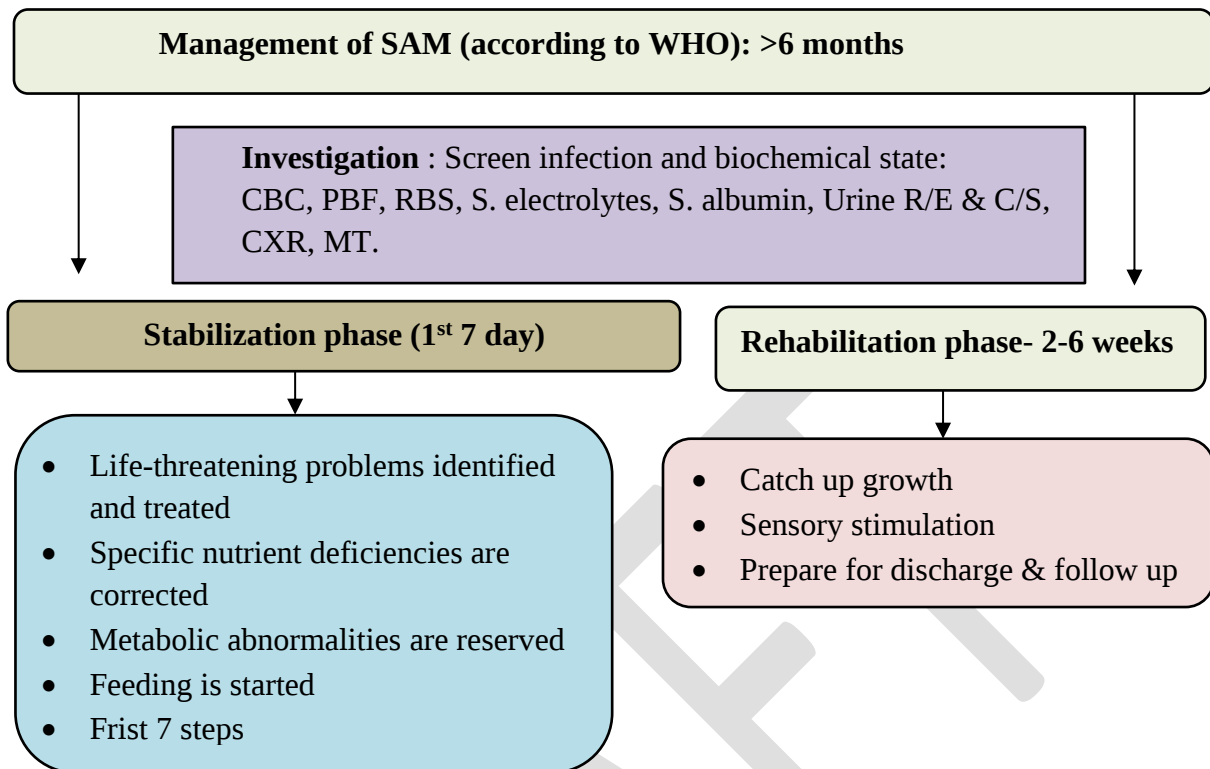
Indicators	Measures	Cut-off
Severe wasting	Weight for height Z score / Weight for length Z score	< -3
	Mid upper arm circumference (MUAC)	< 115 mm
Bipedal oedema	Clinical sign	Present

Children <6 months: WHO criteria:

- Weight -for -Length Z score (WLZ) : < -3
- Visible wasting
- Bipedal oedema

Moderate Acute Malnutrition (MAM)

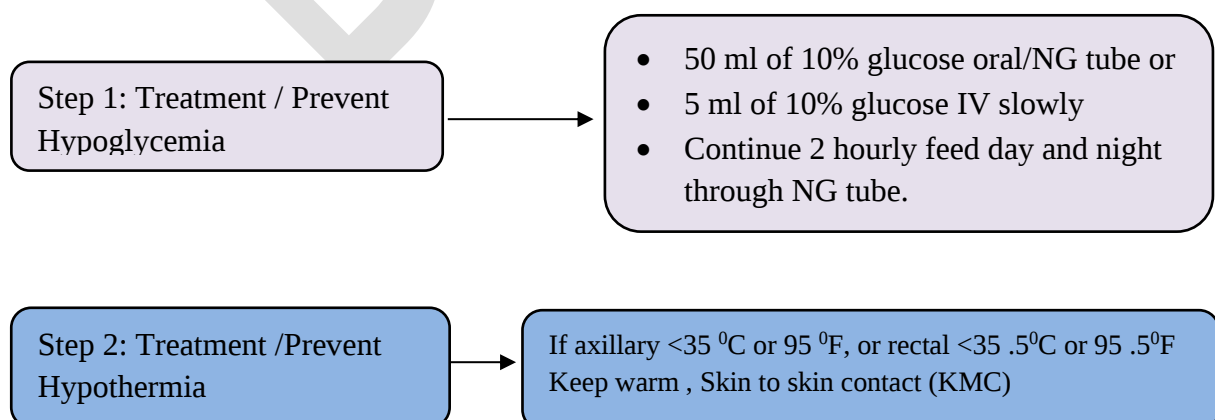
- Home treatment
- One extra meal (to provide additional >25 kcal/kg/day) above the daily requirement
- Up to 2 years : IYCF feeding protocol, plus multivitamins micronutrients powder
- 2 – 5 years : IMCI feeding protocol
- Give anti-helminthic every 6-month interval & treat any associated infections
- Promote food and other hygiene (e.g. hand washing) to prevent further infection

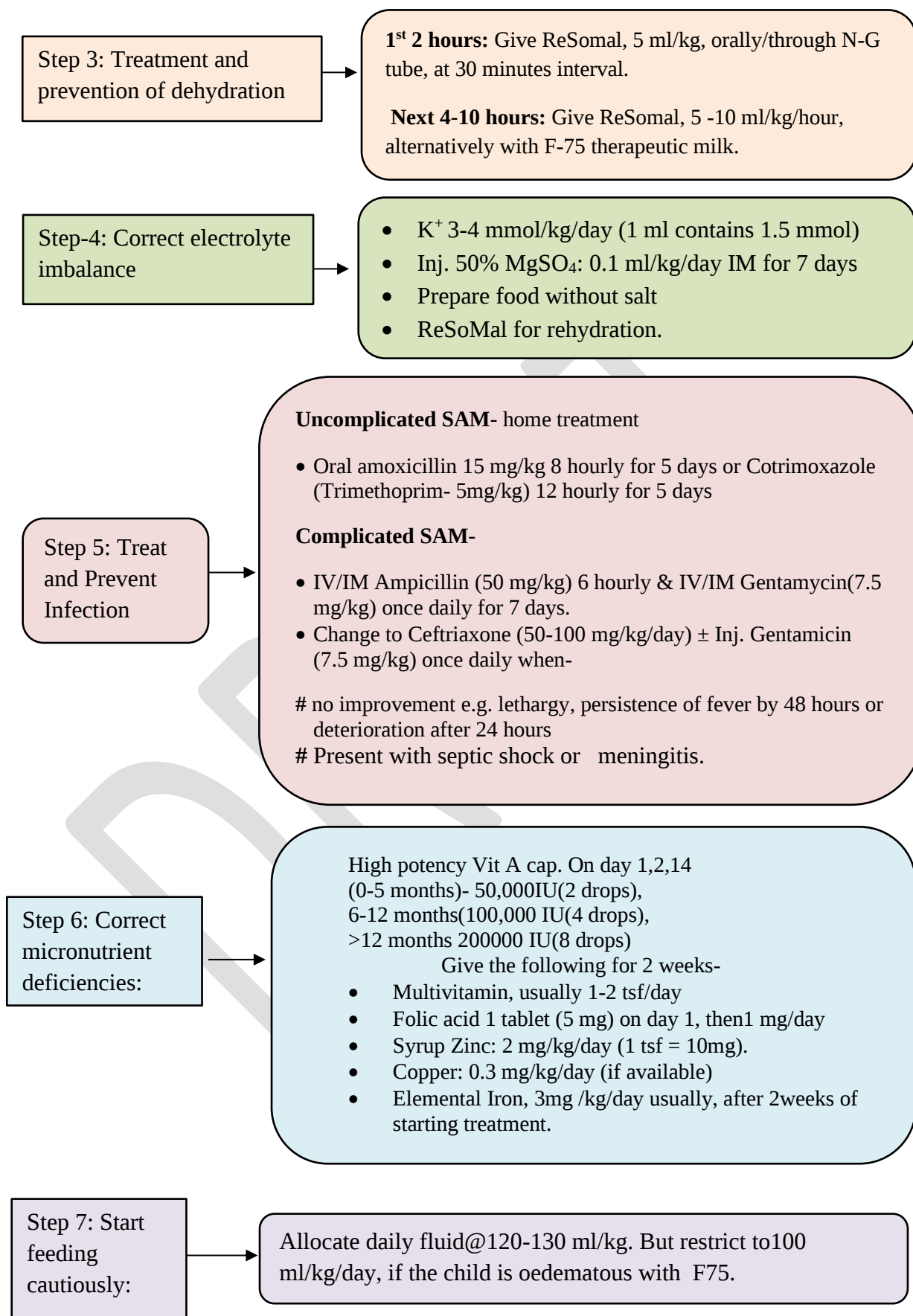


Principal of Management

1. Ten steps management
2. Treatment of associated condition
3. Treatment of complication
4. Prevention

Ten steps of management





Step 8: Achieve Catch-up Growth

About 1 week after admission, when appetite returns, oedema disappears-
Change F-75 to F-100 therapeutic milk gradually.

Step 9: Provide sensory stimulation and emotional support

Step 10: Prepare for discharge and follow-up after recovery

if criteria for discharge fulfilled-

- $WHZ \geq -2SD$
- Oedema has resolved
- Gaining weight
- Eating an adequate amount of nutritious food that the mother can prepared at home
- All infection and complication have been treated
- Provided with micronutrients
- Immunization is updated.

Treatment of associated Condition:

Vitamin A deficiency

- Vitamin A capsule to all children with SAM (single dose); If photophobia / Xerophthalmia present, give vitamin A on day 1, 2 and 14
- Persistent diarrhea – Give vitamin A on day1
- In case of Measles – Give vitamin A on day1 &2

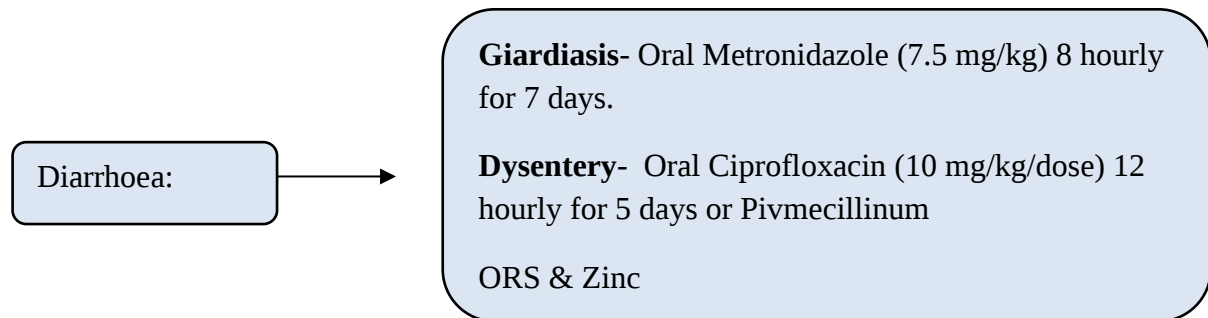
Dermatosis:

For fungal infections

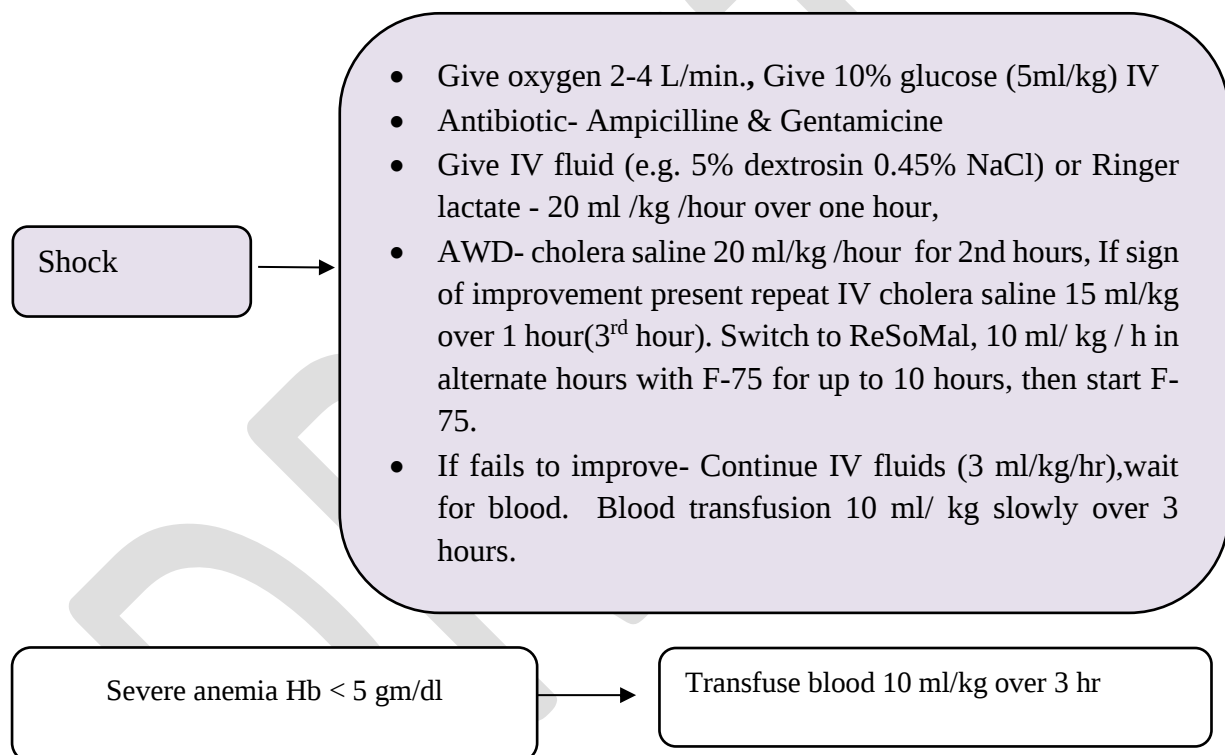
- Skin lesions: give Clotrimazole cream to apply twice daily for 2 weeks. Or
- 1% potassium permanganate solution soaked gauze over affected area.

Helminthiasis

- Albendazole single dose for children (12-23 months): 200 mg, Children ≥ 24 months: 400 mg, OR
- Mebendazole: 100 mg twice daily for 3 days (>24 months of age)



Treatment of complications :



Follow up: F/U visit-1 wk, 2 wk, 1 month, 3 months, then 3 monthly until WHZ become >-1

- ❖ Start feeding with F-75 therapeutic milk 2-3 hourly orally through NG tube

Bronchiolitis

Inflammation and obstruction of the small airway (bronchioles) of the lungs. The children's of 2 months to 2 years are affected commonly, mostly 2-6 months in epidemics

Symptoms

Sudden onset of cough & wheezing
Respiratory distress
Healthy previously
H/O contact with patient having coryza

Signs

Dyspneic, Flaring of alae nasi, Cyanosis (occasional), Head nodding, Occasional grunting. Fast breathing, Chest indrawing, widespread rhonchi, sometimes Crepitation. May have silent chest

Risk Factors:

Prematurity
Underlying lung or heart cause
Non-breast-fed baby
Exposure to smoke
Overcrowded environment
Low socioeconomic status

Causes:

RSV (commonest)
Influenza, parainfluenza
Human metapneumovirus
sometimes Mycoplasma

Diagnosis based on the clinical feature & supported by
Investigations -

- X-ray chest – hyper translucency of lungs field, no pneumonia, atelectasis may be present
- CBC

Treatment:

Severe cases - need hospitalization.

Mainly supportive treatment

- Ensure feeding, head in upright position, nose clear
- if needed, NPO & IV fluid
- Humidified O₂ inhalation, 4-6 L/min
- Nebulization with hypertonic saline e.g., 3% NaCl may be helpful
- Antibiotics when secondary infection
- Budesonide inhaler when atopy present

Prognosis; If untreated, cause death 1%

Febrile Convulsion

Febrile seizures are seizures occurring in febrile children between the ages of 6 and 60 months with rapid rise of temperature

Criteria for diagnosis:

- Febrile seizure is accompanied by fever (100.4°F or 38°C or more).
- Occur between the age of 6 and 60 months of age.
- Without central nervous system infection or metabolic imbalance.
- In the absence of a history of prior afebrile seizure.

Simple febrile seizure:

- The attack is primarily generalized tonic-clonic
- Lasting for <15 minutes
- Not recurrent within a 24-hour period.
- Family history may be present

Complex febrile seizure:

- Seizure with focal manifestation
- Prolonged (15 minutes or more) duration
- Recurrent within 24 hours.
- Febrile seizure lasting longer than 30 minutes is called febrile status epilepticus.

Exclude other causes by History:

- Meningitis
- Encephalitis
- Cerebral malaria
- Metabolic derangement

Examinations:

Level of consciousness
Sign of meningeal irritation
Sign of infection- Otitis media, skin rash, throat tonsil

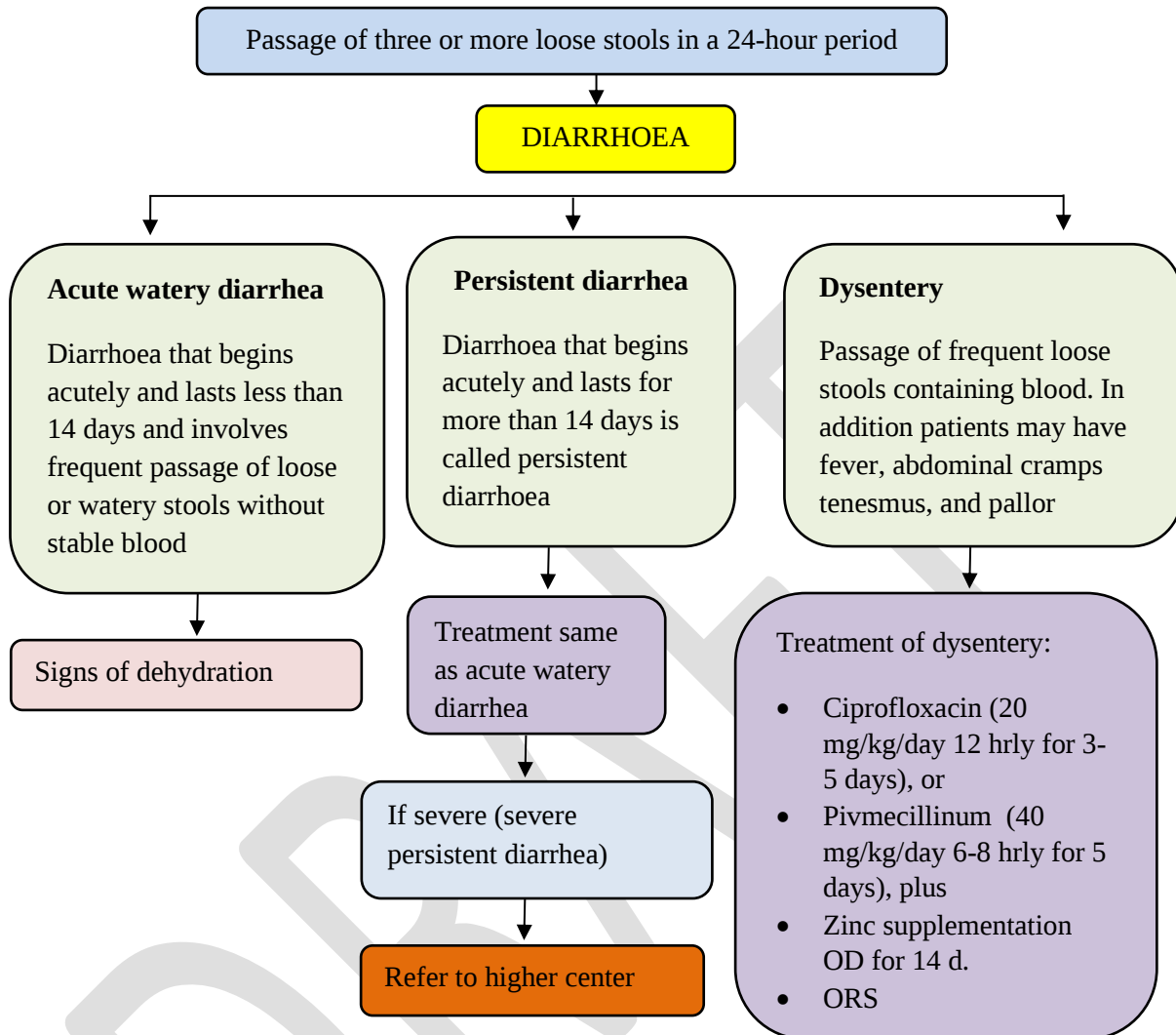
Investigations: CBC, RBS, CXR if indicated

Treatment:

- Per rectal diazepam (0.5 mg/kg)
- Syp. Paracetamol - 15 mg/kg/dose 8 hourly if temperature $\geq 100^{\circ}\text{F}$
- Antibiotic- If bacterial infection suspected (e.g., otitis media etc.)
Syp. Amoxycillin 50-80 mg/kg/day in 3 divided doses (8 hourly) -7 days

Prophylaxis : The risk of recurrence can be reduced by diazepam 1mg/kg/dl 8 hourly for 2 – 3 days or at clobazam 1mg/kg/d or clonazepam useful for 2-3 days, with paracetamol for fever.

Diarrhoea in Children



Some dehydration (if ≥ 2 of the following signs are present)	Severe dehydration (if ≥ 2 of the following signs are present)
Restless, irritable Sunken eyes Drinks eagerly Skin pinch goes back slowly	Lethargy/unconsciousness Sunken eyes Unable to drink poorly Skin pinch goes back very slowly (>2 sec)
N.B. If the child has not enough signs to classify some or severe dehydration, he or she will be classified as no dehydration.	

Treatment

Acute watery diarrhoea :

A. Fluid therapy- Correction of dehydration if present according to plan A/B/C

Plan A (No dehydration)	Plan B (Some dehydration)	Plan C (Severe dehydration)		
Choice of fluid: • ORS • Others-chira pani • Cooked rice water (vater mar) • Yoghurt • Dab water etc. Amount of fluid after each stool: • < 2 years: 50-100 ml • ≥2 years: 100-200 ml	Choice of fluid: • ORS Amount of fluid: 75 ml/kg Route of rehydration: Oral Duration of rehydration: 4 hrs	Choice of fluid: • Cholera saline • Ringers lactate Amount of fluid: 100 ml/kg Route of rehydration: Intravenous Duration of rehydration:		
		Age	First give	Then, give
			30ml/kg over	70ml/kg over
		< 12 Months	1 hour	5 hours
		≥12 months	½ hour	2 ½ hours

- During rehydration, foods other than breast milk should be withheld
- Reassess state of dehydration after correction of dehydration, then choose again treatment plan A, B or C according to the grade of dehydration

B. Drugs:

Zinc: 1-2 mg/kg/day for 14 days.

Antibiotics:

Cholera:

Erythromycin (30-40 mg/kg 6 hrly for 3 days) or
Doxycycline (2-5 mg/kg/day 12 hrly for 3 days) or
Ciprofloxacin (10 mg/kg/dose 12 hrly for 5 days)

Amebiasis / Giardiasis: Metronidazole (35-50 mg/kg/day 8 hrly for 7-10 days)

C. Dietary management:

- Breastfeeding should be continued. In case of non-breastfed babies undiluted milk should be given.
- Balanced diet should be given at least 6 times a day. After recovery one additional diet should be given for at least 2 weeks to combat malnutrition

D. Additional therapies:

The use of probiotic for prevention and therapy of diarrhea has been successful in some settings. A variety of organisms (*Lactobacillus*, *Bifidobacterium*) have a good safety record. *Lactobacillus rhamnosus* is associated with reduced diarrhoeal duration and severity, especially in *Rota* diarrhea

Low Birth Weight (LBW) Babies

Babies with birth weight <2500gm irrespective of the gestational age.

LBW can be-

1. Pre-term: born before 37 completed weeks
2. Small for gestational age: weight below 10th percentile for gestational age

Category of low birth weight:

Low birth weight (LBW)	<2500 gm
Very low birth weight (VLBW)	<1500 gm
Extremely low birth weight (ELBW)	< 1000 gm
Incredibly low birth weight (ILBW)	< 750 gm

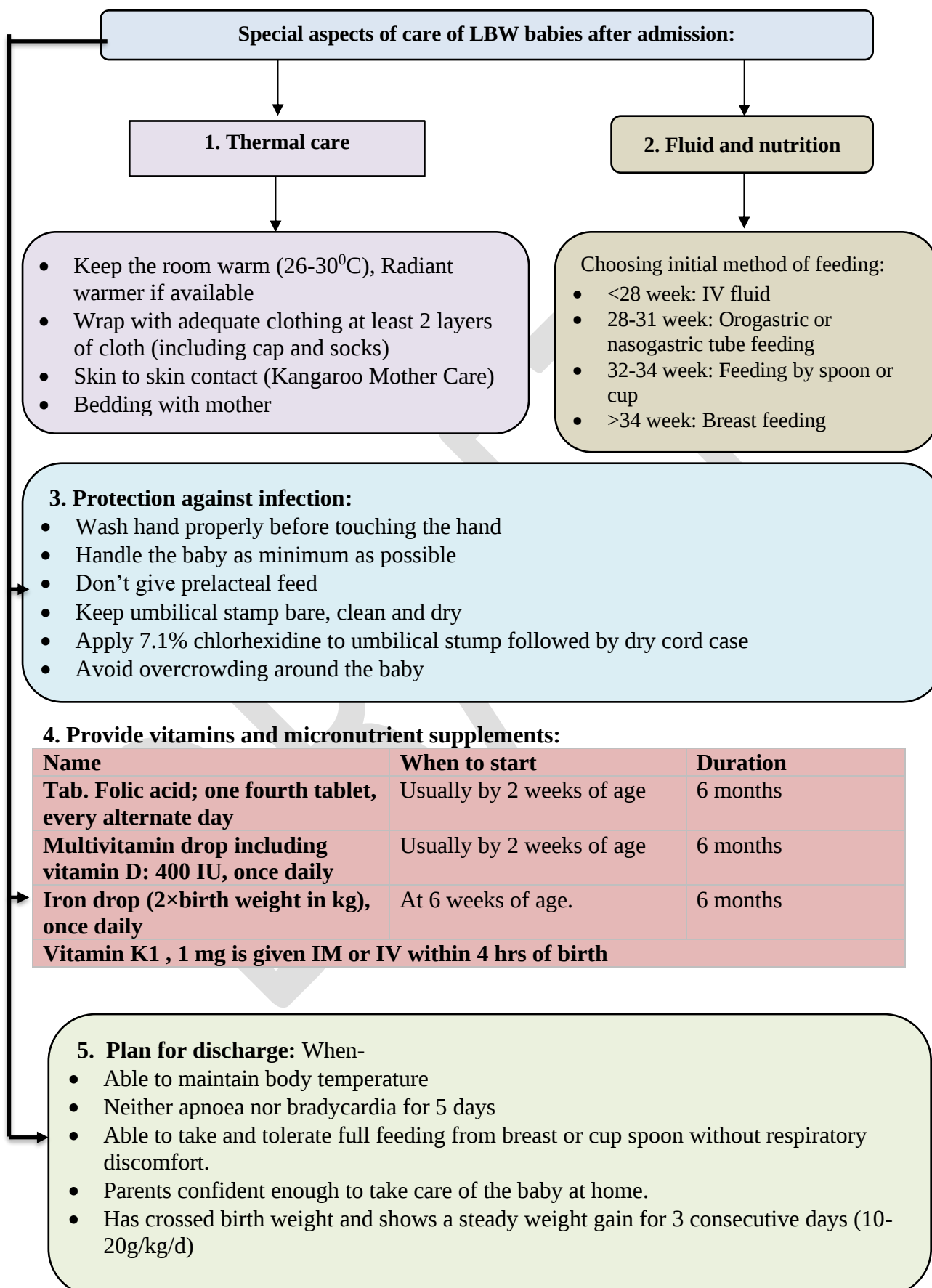
Problems of a preterm LBW baby:

Immediate	Late
1. Sepsis 2. Hypothermia (< 95°F) 3. Hypoglycaemia (RBS < 2.6 mmol/L) 5. Hypocalcaemia 4. Respiratory distress syndrome (RDS) 5. Apnoea (cessation of resp. >20 sec.) 6. Feeding difficulty 7. Haemorrhage (minor to fatal) - <i>intraventricular, GI, pulmonary haemorrhage.</i> 8. Problems of Gut e.g. necrotizing enterocolitis (NEC), gastroesophageal reflux disease (GERD) 9. Exaggeration of physiological jaundice 10. Patent ductus arteriosus (PDA) 11. Anaemia of prematurity	1. Growth failure 2. Late anaemia of prematurity 3. Retinopathy of prematurity (ROP) 4. Developmental delay 5. Neurological deficit 6. Learning disability 7. Hearing deficit 8. Osteopenia of prematurity

Management of low birth weight (LBW) babies:

Indication for hospital admission:

1. Gestation : <34 weeks
2. Birth weight: <1800 gm
3. Any sick baby

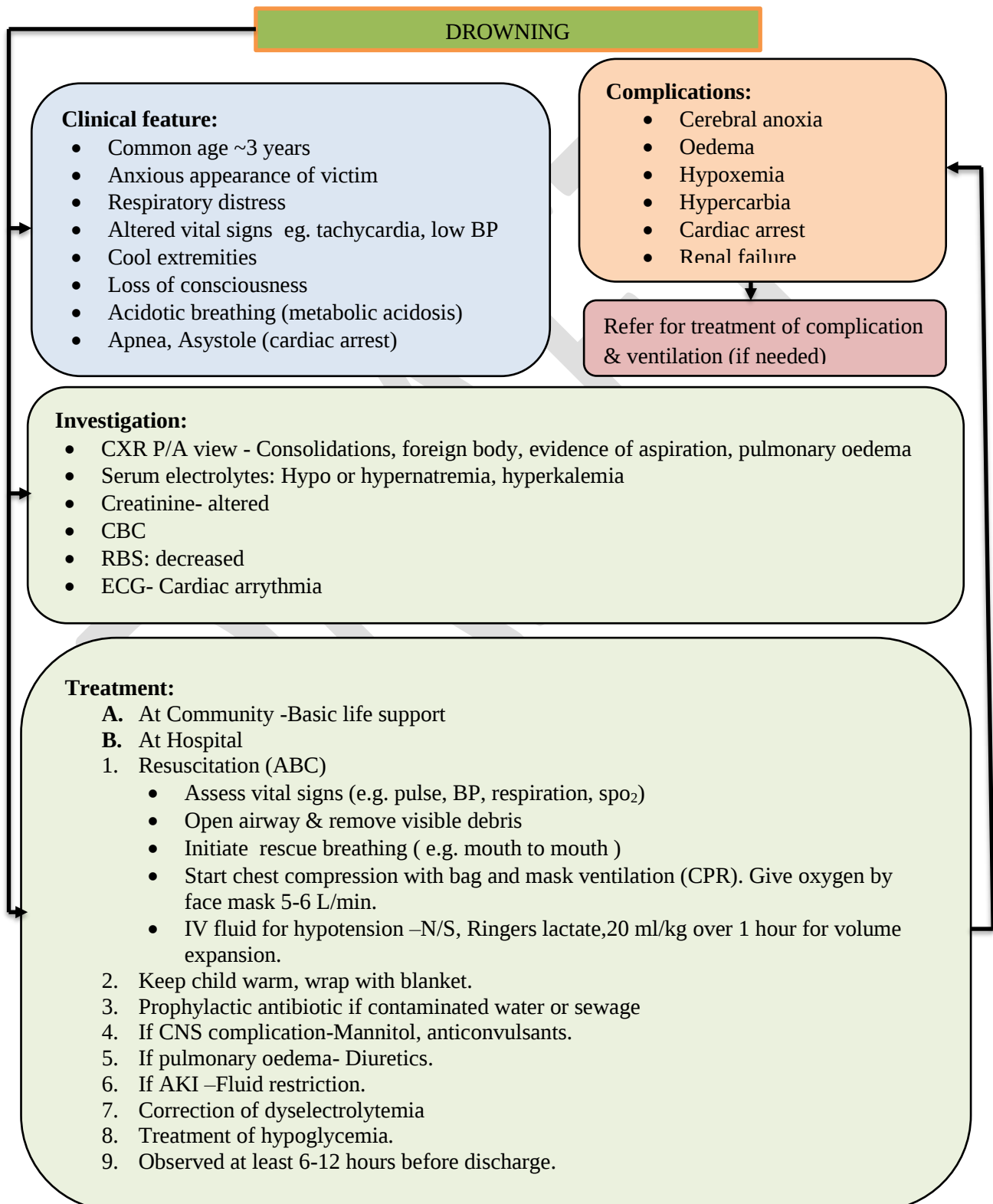


Drowning

Hypoxemia is the principal problem in the drowning or submersion injury. Aspiration of water occurs in 90% of cases. The three effects of aspiration are:

1. Aspiration pneumonia
2. Hypoxemia &
3. Hypothermia

Hypoxemia for more than 5 minutes causes neurological damage. Drowning may be fatal or nonfatal.



Neonatal Jaundice

Types of neonatal jaundice:

1. Physiological jaundice:

- Jaundice appears 2nd day onward
- Bilirubin level rises slowly
- Level rarely goes above 15 mg/dl
- Baby remains otherwise healthy
- Jaundice clears spontaneously within 7-10 days
- Stool color is normal

2. Pathological jaundice:

- Jaundice appeared on the 1st day of life
- Jaundice extends up to palm & sole
- Jaundice with any sign of sepsis/ in sick neonate
- Rate of rise in serum bilirubin levels over 0.5 mg/dl/hour or 10 mg/dl/day
- Jaundice lasting longer than 14 days in term & 21 days in preterm
- Jaundice with pale stool

Risk factors:

- Setting of blood group incompatibility (baby of Rh negative mother or type O Positive mother)
- Preterm infant
- Previous sibling receiving exchange transfusion
- Concealed hemorrhage (cephalohaematoma) or extensive bruising

Diagnosis by history, symptoms & signs

History relevant points

- Age of onset & duration of jaundice
- H/O jaundice in previous child
- H/O death of any baby due to jaundice & intrauterine death
- Blood group & Rh typing of baby & mother

Symtoms & signs

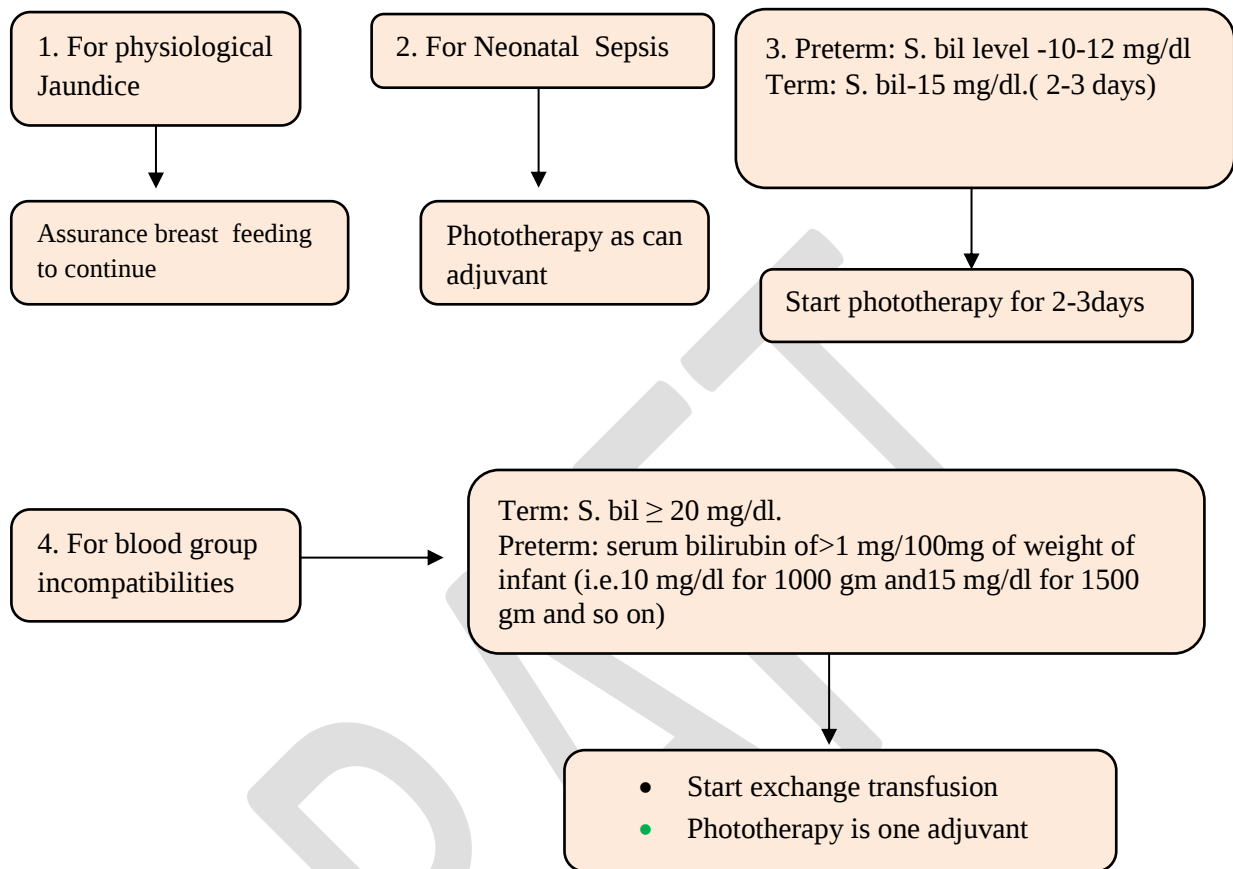
- Estimate jaundice level by visual estimation (whether extended upto palms & soles)
- General: Anaemia, activity
- Systemic: Hepatosplenomegaly
- Any evidence of sepsis: Lethargy, poor feeding
- Abnormal neurological behavior: Convulsion, rigidity

Investigation:

1. Serum bilirubin- Direct & indirect
Direct - Increased in sepsis, neonatal hepatitis, biliary atresia
Indirect - Increased in physiological jaundice, jaundice of prematurity, haemolytic disease of newborn
2. Blood group & Rh typing of baby & mother, Rh antibody titre in mother
3. CBC with PBF: Hb – decreased
TC, DC, Platelet: To asses for evidence of associated sepsis
PBF: evidence of haemolysis
4. Coombs test (Direct & Indirect): May be positive in Rh & ABO incompatibility

Management

Management:



NB. Treatment of sepsis has been written elsewhere

Perinatal Asphyxia

It is a clinical condition resulting from impairment of gas exchange in the fetus leading to hypoxia; hypercarbia and acidosis. Approximately 10% of newborns require some assistance to begin breathing at birth after drying. About 1% needs extensive resuscitative measure to survive.

Classification:

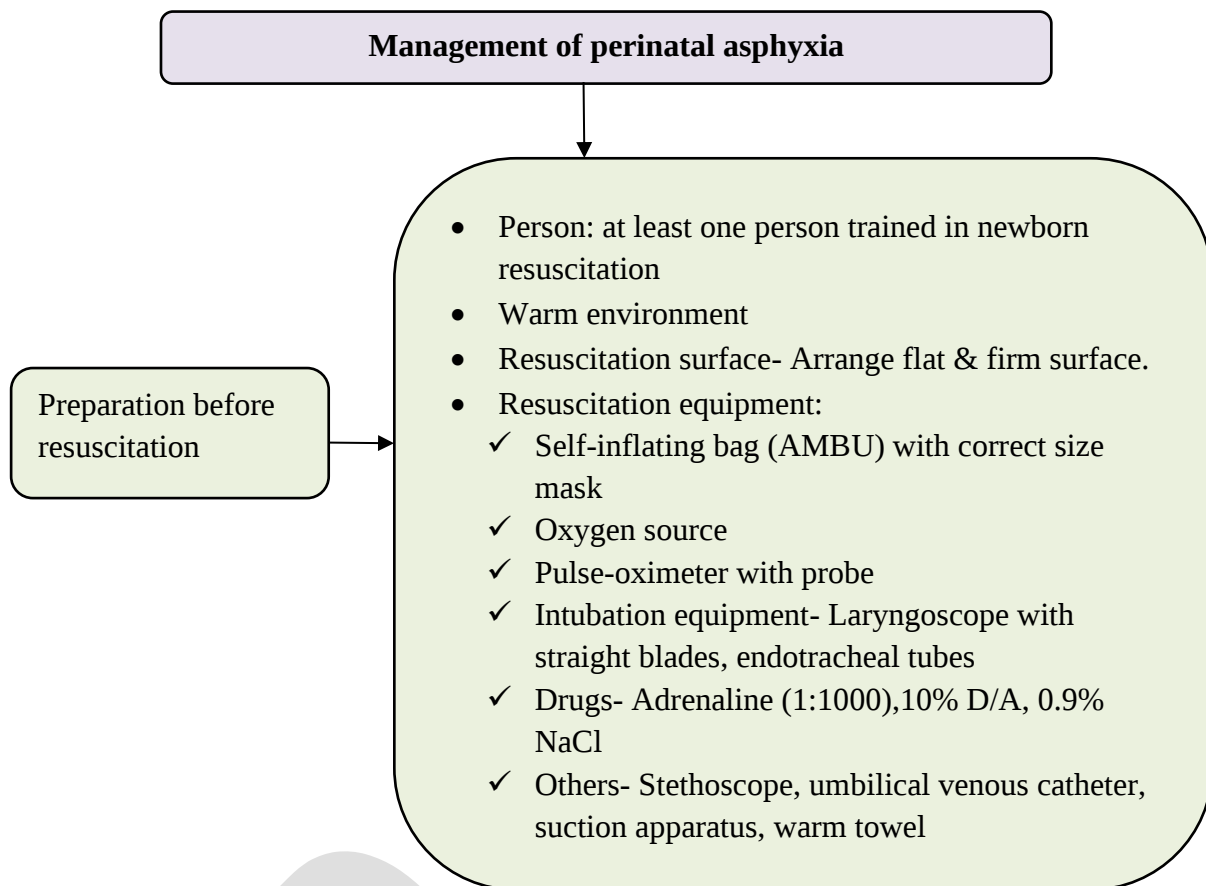
APGAR score	Type
0-3	Severe
4-7	Mild to moderate

Diagnosis by clinical features

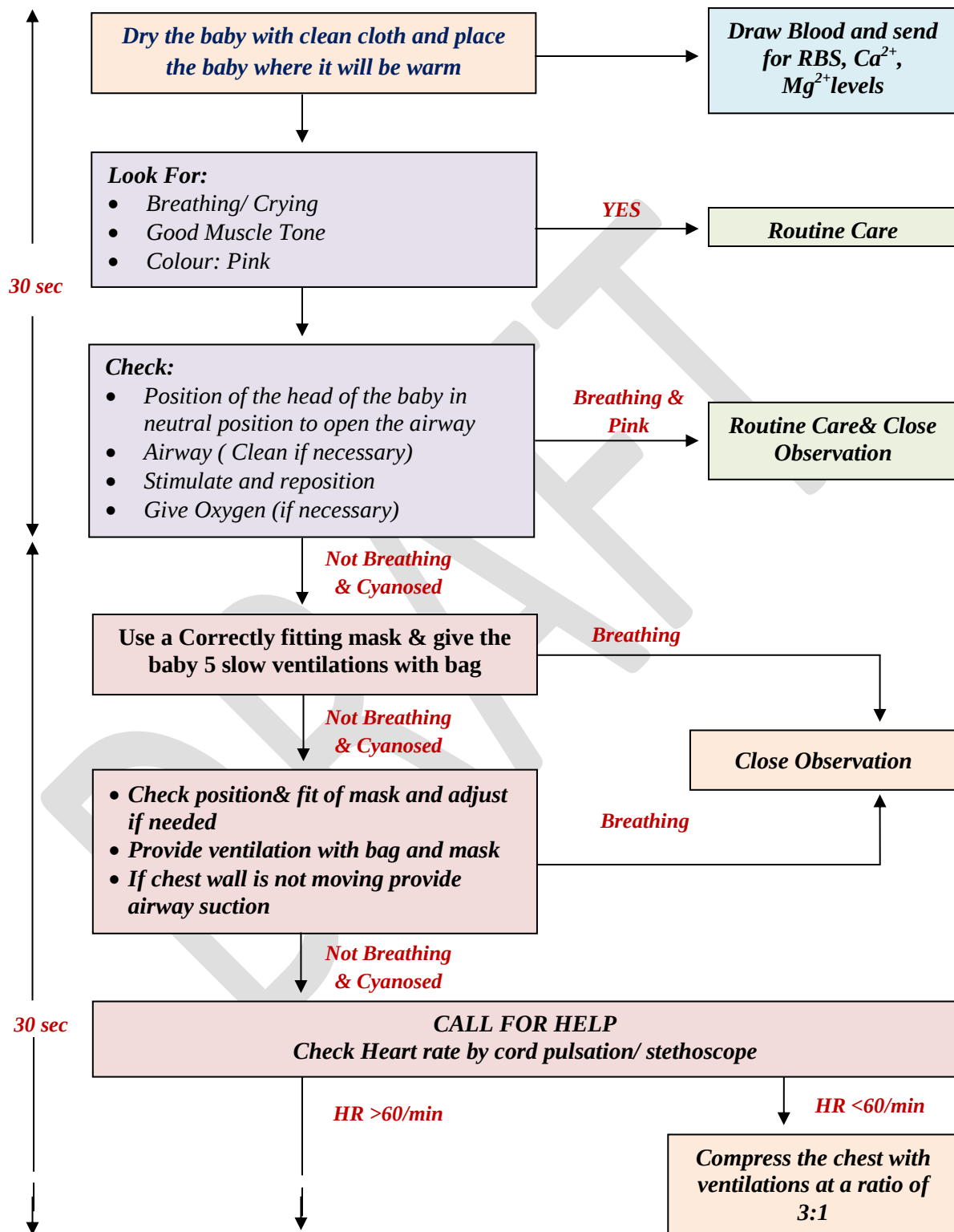
- No respiration, no cry (apnoea)
- Bradycardia (< 100 beats/min)
- Gasping respiration with long pauses
- Cyanosis
- Convulsions
- Skin appears bluish grey (asphyxia livida) or death like pallor (asphyxia pallid)
- Less tissue perfusion (capillary refill time >3 sec)
- Muscular hypotonia
- Oliguria

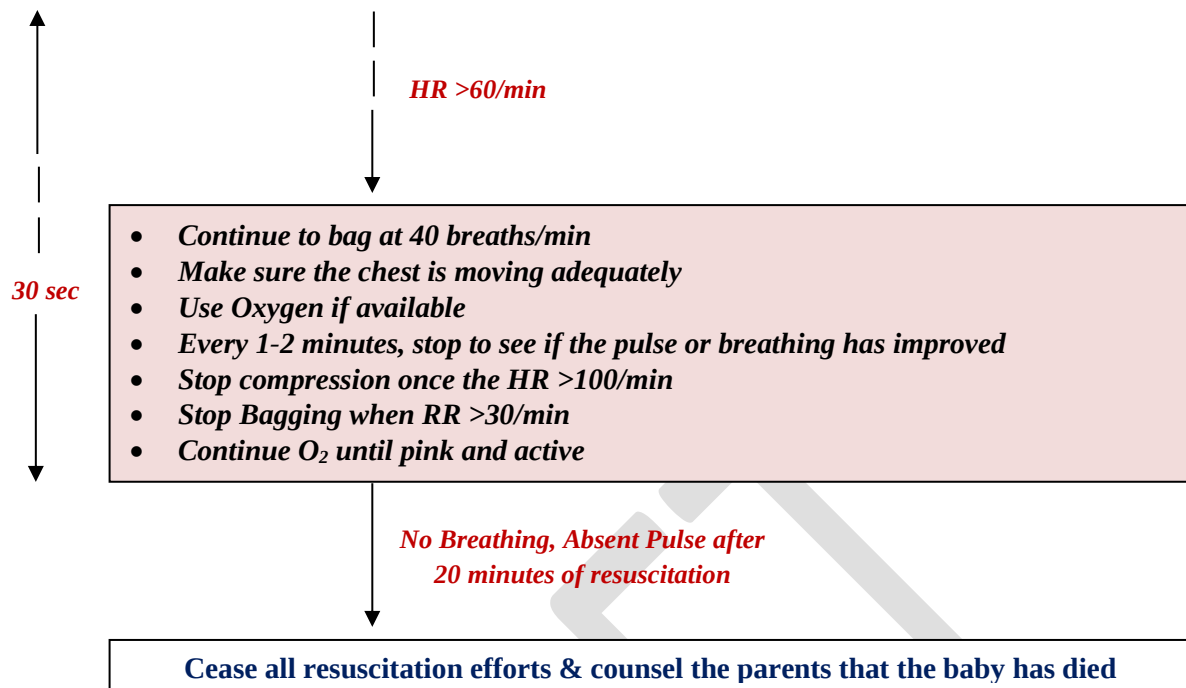
Consequences

- Brain- Hypoxic ischemic encephalopathy(HIE)
- Kidney-Acute kidney injury
- Heart-Hypoxic cardiomyopathy/CCF
- Lungs- Pulmonary hemorrhage (PPHN), RDS
- Adrenal hemorrhage
- Liver- Hepatocellular necrosis
- SIADH, Hypoglycemia, Hypocalcemia, Hyponatremia
- DIC



THE STEPS OF RESUSCITATION (WHO 2005) :





Post resuscitation
care

- Maintain body temperature (mentioned elsewhere)
- Support respiration by –
 - ✓ Supplemental oxygen by nasal canula (2l/min), head box(5-6 L/min)
 - ✓ Continuing artificial ventilation if already in the machine
- Regular monitoring (4-6 hourly)
 - ✓ Respiratory status: respiratory rate, cyanosis, SPO2
 - ✓ Circulatory status: Heart rate, BP, capillary refilling time
 - ✓ Renal status: Urine volume, S. creatinine, electrolytes
 - ✓ Haematological status: Any bleeding, anaemia
 - ✓ Capillary blood glucose status
 - ✓ Arterial blood gas (ABG) analysis, when needed

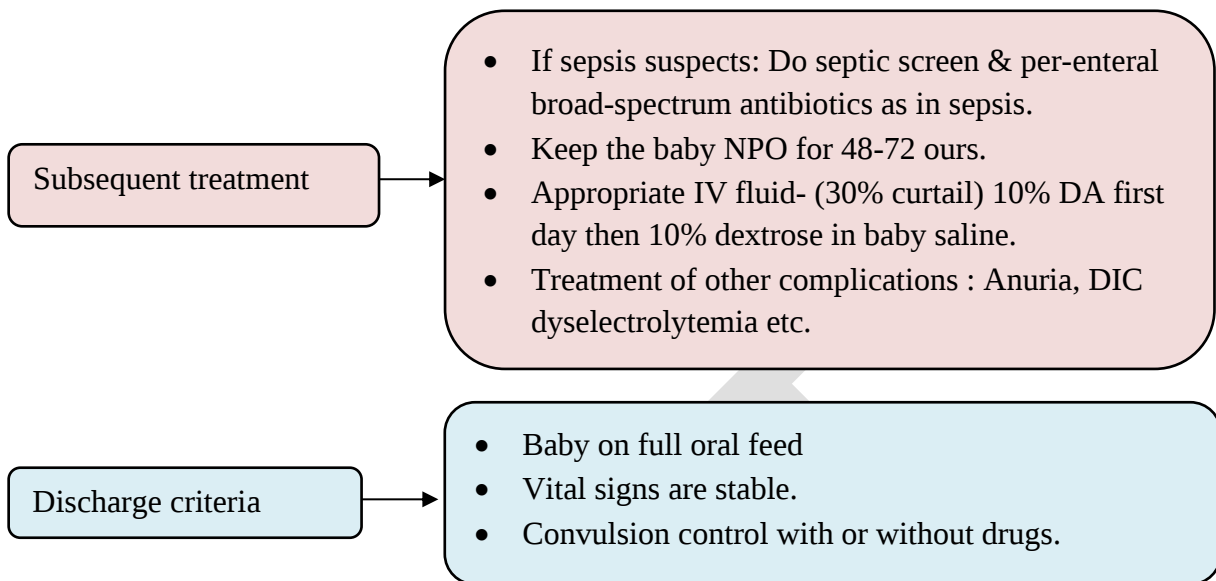
Treatment of complications

Shock (CRT > 3 sec, rapid
pulse volume low, BP low):

Infuse normal saline bolus @ 10 ml/kg over 30 min,
then Give dopamine / dobutamine @ 5-10 µgm/kg/
min

Convulsion

- Phenobarbitone (PB) IV 20 mg/kg over 20 minutes (slowly @ 1mg/kg/min); if not controlled repeat 10/mg/kg/dose up to 40 mg/dose
- Check & correct hypoglycaemia or hypocalcaemia, if present
- Convulsion continues: Start Fosphenytoin 30 mg/kg/dose IV diluted in Normal Saline slowly @ 1mg/kg/min
- Convulsion continues: Midazolam initiation bolus 0.2 mg/kg then 0.01-2.0 mg/kg/hour in drip; increase every 15 minute up to 2 mg/kg/hour, if no response
- When controlled: PB 5 mg/kg/12 hrly for maintenance
- If convulsion continues: Refer to tertiary hospital



Pneumonia

Pneumonia is the most important cause of death in children worldwide

A) Cluster clues to diagnosis of pneumonia: (**age >5 years**); Mention elsewhere

B) Pneumonia and recommended treatment in children: **2 months - 5 years (WHO 2019)**

If cough or difficult breathing e.g. respiratory rate, stridor wheeze then do clinical assessment for pneumonia.

Sign or Symptom	Classification	Treatment
- Any general danger sign (had convulsion during present illness/convulsing now, lethargic or unconsciousness, not able to drink/breast feed, vomits everything) OR - Stridor in a calm child OR - Oxygen saturation SPO <90%	SEVERE PNEUMONIA	- Hospitalization - Give first dose of Inj. Gentamicin 5-7.5 mg/kgIM and oral Amoxillin 50 mg/kg/day 12 hourly as prereferral treatment - Treat to prevent low blood sugar/NG feeding - Give inhaled salbutamol, if wheezing
- Chest indrawing OR - Fast breathing ✓ ≥ 60 breaths/min (age <2 months) ✓ ≥ 50 breaths/min (age <12 months) ✓ ≥ 40 breaths/min (age 1-5 years)	PNEUMONIA	- Give Oral Amoxicillin for 5 days - If wheezing, inhaled/oral Salbutamol for 5 days - Soothe the throat and relieve cough with a safe remedy - If coughing >2 weeks or recurrent wheeze, refer to asses for TB or asthma - F/Up after 3 days - Treatment at home

Note: If wheezing, fast breathing or chest indrawing : give a trial of rapid acting inhaled bronchodilator for upto 3 times- 20 minutes apart, if improves continue bronchodilator treatment. Hydrocortisone may be given when indicated

Antibiotic use:

Neonate and age <2 months:	Ampicillin and gentamicin 7-10 days or 3 rd generation of cephalosporin and Amikacin- 7-14 days.
Age 2 month -5 years	Inj Ampicillin 6 hourly 50 mg /kg/dose plus Inj Gentamicin 7.5 mg /kg/day-7 days If no response within 48 hours, change Ampicillin to Cloxacillin or Inj ceftriaxone (80-100 mg) IM/IV for 7-10 days
Age > 5 years:	First line: 3 rd generation Cephalosporin (e.g., Ceftriaxone 80 mg /kg day) <i>plus</i> Gentamicin (5 mg /kg day) Second line: 3 rd generation Cephalosporin <i>plus</i> Gentamicin <i>plus</i> Vancomycin 40 mg/kg/day Duration of Rx: 10-14 days

Neonatal Sepsis

The clinical spectrum of sepsis begins when a systemic infection (eg. Bacteremia, septicaemia) or localised infection (eg. Meningitis, pneumonia, pyelonephritis) progresses from sepsis to severe sepsis (eg. Septic shock, multiorgan dysfunction syndrome or MODS etc.)

Types:

1. **Early onset sepsis (EOS)** - Sepsis that is acquired before or during birth and the manifestations are present within first 72 hours of birth.
2. **Late onset sepsis (LOS)** - Sepsis that is acquired after delivery (in the nursery or in the community) which usually presents after 72 hours of age.

Risk factors:

- Prematurity (<37 weeks)
- Low birth weight (<2500 gms)
- Febrile illness of mother with evidence of bacterial infection within 2 weeks prior to delivery
- Foul smelling and/or meconium stained liquor
- Rupture of membranes >18 hours
- Single unclean or >3 sterile vaginal examinations during labor
- Prolonged labour (sum of 1st & 2nd stage of labor > 24 hours)
- Perinatal asphyxia (APGAR score <4 at 1 minute)
- Invasive procedures
- Poor cord care
- Bottle feeding, prelacteal feeds.

Signs & Symptoms:

- Not feeding well/ refusal to suck 2-3 days after birth.
- Lethargy, poor muscle tone, poor cry
- Low body temperature or fever.
- Movement only when stimulated or no movement at all
- Vomiting, Abdominal distension
- Prolonged capillary refill time
- Hypotonia, absent neonatal reflexes
- Brady/tachycardia
- Respiratory distress, apnea and gasping respiration
- Hypo/hyperglycemia
- Bleeding, petechia, purpura
- Irritability, high pitch cry, seizure
- Umbilical redness and discharge
- Multiple pustules, abscess, sclerema

Investigations-

- Septic screen: If 2 (or more) parameters are abnormal, it should be considered as positive screen

Total leukocyte count	<5000/mm ³ , >25000/mm ³
Absolute neutrophil count (ANC)	Low counts <1500/mm ³
Immature/total neutrophil ratio(IT ratio)	>0.2
Micro ESR	>15 mm in 1 st hour
C-reactive protein(CRP)	≥6 mg/L

- CBC with PBF
- Supportive Investigations
 - ✓ TC- Increase or decrease
 - ✓ Hb- May be decreased
 - ✓ Platelets-May be decreased
 - ✓ PBF: Toxic Granules or band from neutrophil
- Blood for C/S: May reveal the organism
- CSF study: To assess evidence of meningitis
- Urine for R/M/E, C/S : To look for evidence of infection
- X-ray of chest: To look for evidence of pneumonia
- X-ray of abdomen: To look for evidence of NEC
- USG of brain or others as individualized
- RBS
- Serum Electrolytes
- Serum Creatinine

Management

Supportive:

1. **Hypothermia:** Wrap the baby with warm clothes, keep under radiant warmer or in incubator.
2. **Hypoglycaemia:** Correct by 2ml/kg of 10% DA I/V
3. **Hypocalcemia:** I/V by 2ml/kg of 10% Calcium gluconate.
4. **Convulsion:** By I/V Phenobarbitone (described elsewhere)
5. **Hypoxia:** Give oxygen by nasal cannula, face mask or head box-keep $\text{SPO}_2 > 95\%$
6. **Nutrition:** I/V alimentation, nasogastric or orogastric feeding when indicated with 20% fluid restriction.

Antimicrobial therapy (Empirical):

1 st line	Ampicillin + Gentamicin
2 nd line	Cefotaxime/Ceftazidime + Amikacin
3 rd line	Meropenem, Vancomycin, Ciprofloxacin, Cefepime, Clarithromycin, Netilmicin, Piperacillin + Tazobactam, Colistin
In case of suspected meningitis	Cefotaxime + Amikacin or Meropenem + Amikacin

NB. Antibiotic may be changed after ~ 3days if improvement does not occur or according to c/s

Duration of antibiotic therapy

Diagnosis	Duration
Risk factor positive (clinically well, culture negative, screen negative)	2-3 days
Risk factor positive, screen positive (clinically well, culture negative)	5-7 days
Clinically sepsis (screen negative)	7 days
Clinically sepsis, screen positive (culture negative)	7-10 days
Blood culture positive (no meningitis)	14 days
Meningitis (with or without positive blood / CSF culture)	21 days
Osteomyelitis or septic arthritis	3-4 weeks

Adjuvant therapy: (when indicated)

1. Fresh blood transfusion
2. FFP transfusion
3. IVIG
4. Colony stimulating factor (G-CSF)
5. Acyclovir or Amphotericin B
6. Consider Cephalosporine if meningitis is suspected
7. Consider a Carbapenem (e.g. Vancomycin) if 3rd generation Cephalosporin recently received

Dengue

Dengue: Case Definition

A. Dengue Fever: Acute febrile illness with 2 or more of the following

1. Headache
2. Retro-orbital pain
3. Myalgia
4. Arthralgia / bone pain
5. Rash
6. Hemorrhagic manifestations
7. Leucopenia (WBC <5000 cells/mm³)
8. Thrombocytopenia (Platelet count <1,50,000 cells/mm³)
9. Rising hematocrit (5-10% from baseline)

B. Dengue haemorrhagic Fever: All of following:

1. Fever (like Dengue fever)
2. Haemorrhagic manifestations,
3. Platelet count (< 100000 cells/mm³)
4. Plasma leakage:
5. Rising Haematocrit (>20% from baseline ± Pleural Effusion/ Ascites / Hypoproteinaemia/ Hypoalbuminaemia)

DHF	I	Fever and Haemorrhagic manifestation (Positive tourniquet test) and evidence of plasma leakage	Thrombocytopenia <100000/cu mm. Hct rises >20%
DHF	II	As in Grade I and spontaneous bleeding	Thrombocytopenia <100000/cu mm Hct rises >20%
DHF	III	As in Grade II and Circulatory failure	Thrombocytopenia <100000/cu mm Hct rises >20%
DHF	IV	As in Grade III and profound shock Undetectable BP and pulse	Thrombocytopenia <100000/cu mm Hct rises >20%

Investigations for diagnosis and management:

1. CBC with Platelet count 2. Haematocrit 3. SGOT/SGPT
2. NS1 antigen-can be positive on the 1st day of fever. Unlikely to be positive after 5 days
3. Anti-dengue antibody: Raised Ig Titre with ELISA or positive in IgM antibody. Commonly Positive after 5 day.

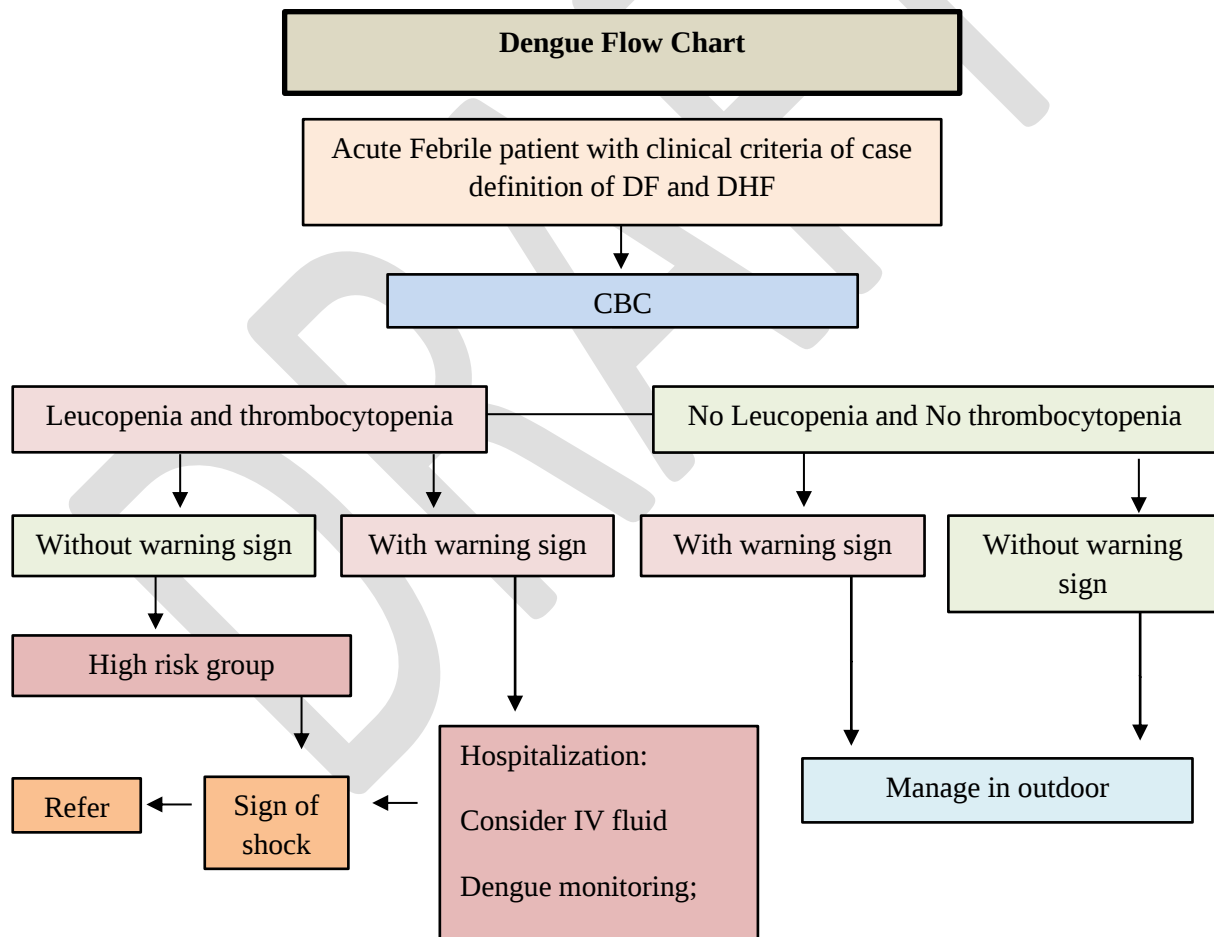
Platelet count and haematocrit need to be repeated in DHF patient daily. Increased SGPT/SGOT more than 5-fold will be commonly seen in DHF patients.

High-risk patients:

1. Infants and the elderly
2. obesity
3. Pregnant women
4. Peptic ulcer disease with history of bleeding
5. Women who have menstruation or abnormal vaginal bleeding
6. Glucose-6PD deficiency
7. Thalassemia and other haemoglobinopathies
8. Congenital heart disease
9. Chronic diseases such as DM, HTN, asthma, IHD, CKD, CLD

Warning signs:

1. No clinical improvement or worsening of the situation just before or during the transition to a febrile phase or as the disease progresses
2. Persistent vomiting, not drinking
3. Severe abdominal pain
4. Lethargy and/or restlessness, sudden behavioural
5. Bleeding: epistaxis, black stool, haematemesis, excessive menstrual bleeding, dark coloured urine (haemoglobinuria)
6. Giddiness
7. Pale, cold and clammy hands and feet
8. Less/on urine output for 4-6 hours.



During febrile phase:
Paracetamol: 15 mg/kg/dose and should be administered in frequency of not less than six hours. The maximum dose for adult is 4gm/day
In children (1tsf-5ml-120mg)
<1 yr – 1-1.5 tsf
1-4 yrs – 1.5 tsf

Criteria for discharging patients

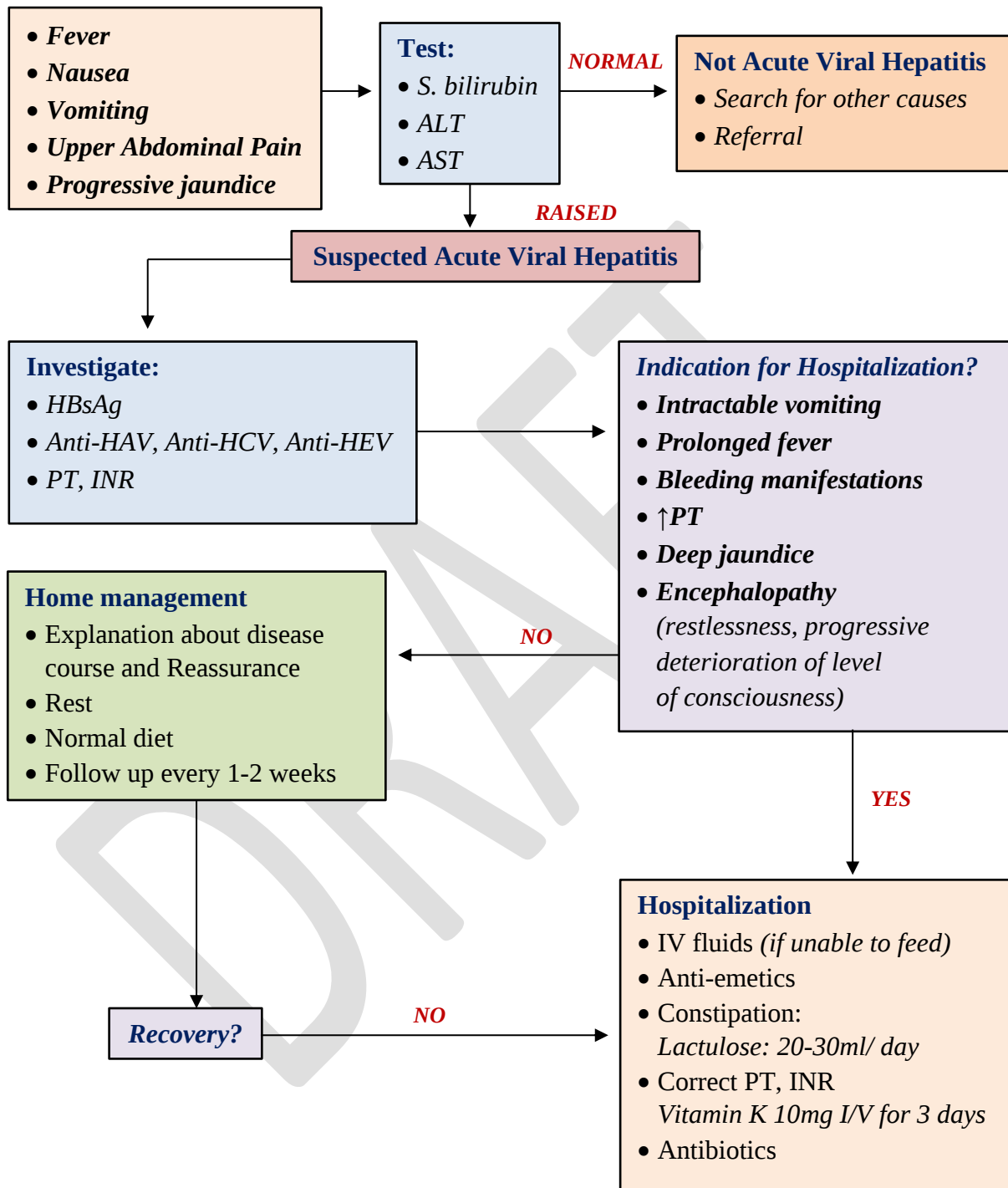
1. Absence of fever for at least 24 hours without the use of anti-fever therapy.
2. Return of appetite.
3. Visible clinical improvement.
4. Satisfactory urine output.
5. A minimum of 2-3 days have elapsed after recovery from shock.
6. No respiratory distress from pleural effusion and no ascites.
7. Platelet count of more than 50000/mm³.

In patient with DHF grade I and II:
In general, the fluid allowance (oral + IV) is about maintenance (for one day) + 5% deficit (oral and IV fluid together), to be administered over 48 hours.
For example, in a child weight 20 kg, the deficit of 5% is $50 \text{ ml/kg} \times 20 = 1000\text{ml}$. The maintenance is 1500 ml for one day. Hence, the total of M + 5% is 2500ml. This volume is to be administered over 48 hours in

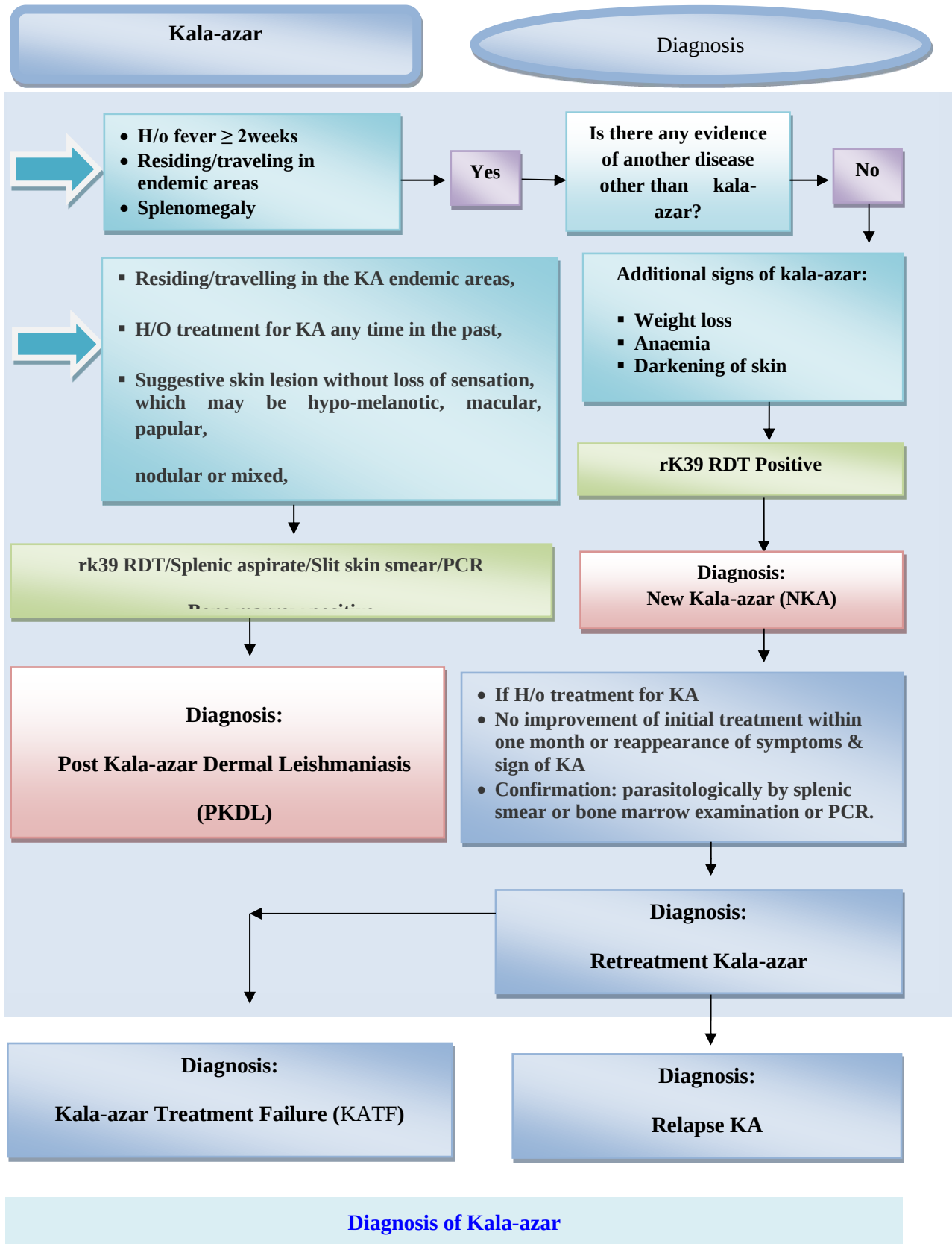
Dos or Don'ts:

1. Do not give aspirin or any NSAIDs for the treatment of any fever
2. Cases of DHF should be observed hourly
3. Avoid giving I/V therapy before there is evidence of hemorrhage or bleeding. ORT with ORS or its equivalent is recommended for patients with moderate dehydration caused by vomiting & high temperature
4. Avoid giving blood transfusion unless indicated, reduction in hematocrit or severe bleeding
5. Avoid giving steroid as these will complicate the situation and there is no sound evidence based indication
6. Food should be given according to appetite. But fresh fruit juice should be given frequently
7. Don't use antibiotics as these don't help
8. Don't change the speed of fluid rapidly

Viral Hepatitis



Kala-azar



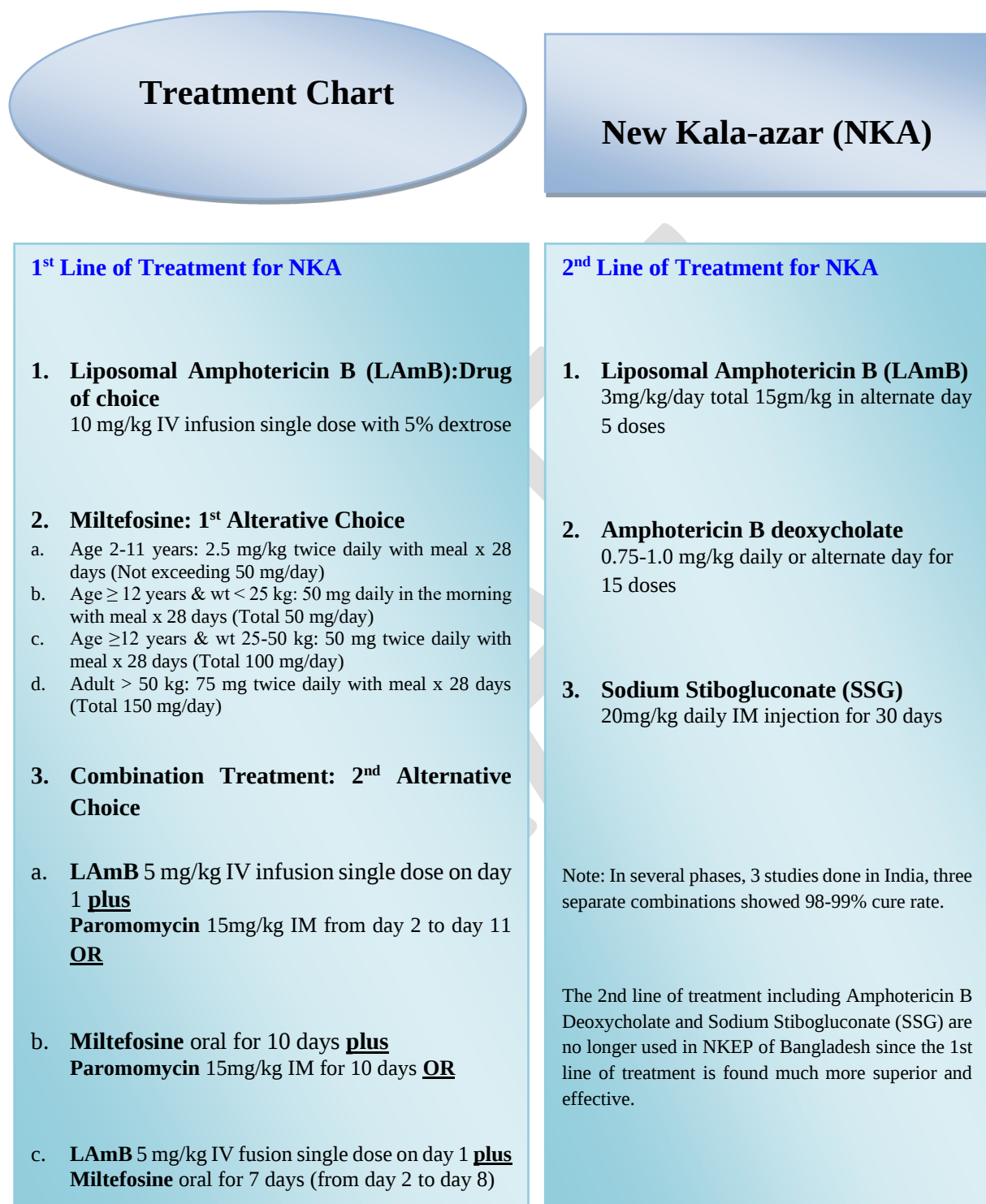


Figure 10: Treatment Chart for NKA

Treatment Chart

RKA, PKDL & CL

TREATMENT FOR RKA

1. Combination Therapy: 1st Alternative Choice

LAmB + Paromomycin:

LAmB 5mg/kg IV infusion on day 1

Paromomycin 15mg/kg IM from day 2 to day 11

If for any reason this combination cannot be given for intolerance, hypersensitivity or relative contraindication, subsequent choice should be decided

2. Combination Therapy: 2nd Alternative Choice

Miltefosine + Paromomycin

Miltefosine- oral form, the dose would be same as that of NKA for 10 days

Paromomycin 15mg/kg IM for 10 days

LAmB + Miltefosine

LAmB 5mg/kg IV infusion on 1st day

Miltefosine oral tablet from 2nd day - 8th day x 7 days

Liposomal Amphotericin B (LAmB) (When combination fails)

Dose- 3-5mg/kg/day total 15mg/kg in every alternate day

TREATMENT OF PKDL

1. First Line of Treatment:

a. Miltefosine

Adult dose: 100 mg daily in two divided doses for 12 weeks.

Children: 2.5 mg/kg/day in two divided doses, not exceeding 50mg/day for 12 weeks.

2. Second Line of Treatment

a. LAmB

5mg/kg/day total 20mg/kg in 4 divided dose once in a week.

b. Sodium Stibogluconate (SSG)

20-mg/kg/day in intramuscular route. Total 6 cycles and each cycle consists of 20 days of treatment and 10 days in between two cycles.

c. Amphotericin B deoxycholate

Dose: 4 courses of 20 injections IV over 5-6 months in every alternate day dose.

Lymphatic Filariasis

Patient with swollen feet, legs, scrotum, vulva, hands, breast, thick irregular skin, lymphangitis, lymphnode enlargement, itching, occasionally fever, rash, warm- tender limbs, cough, breathlessness etc.



Duplex study of vessels		(-)	1. Direct visualization of microfilaria in blood at night (10 pm-2 am), lymphatic exudates, hydrocele fluid, chylous urine.			
		(-)	2. ICT/CFT for Filaria			
		(+)	3. Adult worm in lymphnodes			
Cellulitis	Deep Vein Thrombosis		Filariasis elimination Program 1) DEC (Diethylcarbamazine) + ALB (Albendazole):			
			Drugs Used			
		Age group	DEC (100mg)	ALB (400mg)	Number of tablets	Period
		2-8yr	1	1	2	Successive
		>8-12yr	2	1	3	5 years
		>12 yr	3	1	4	

(NB: Any cycle can be repeated 3 months interval for 6 cycles.

Supportive care

Hygiene, regular washing, elevation of limbs, crepe bandage, appropriate shoes, exercise, hydration, pain killer (NSAID), antibiotic, antifungal, antihistamine etc.

Special Situations

1. ADLA (Acute Dermato - Lymphangio Adenitis): Paracetamol, Amoxycillin / Erythromycin, IV or IM Penicillin. Ceftriaxone IV/IM form can also be used in severe form of ADL. Soaking the affected limb in water of room temperature or rapping the limb with soaked towel. No weight lifting, waking. Take rest. No DEC by mouth during the attack of ADLA.

2. Hydrocele: Surgery (Hydrocelectomy – excision and eversion)

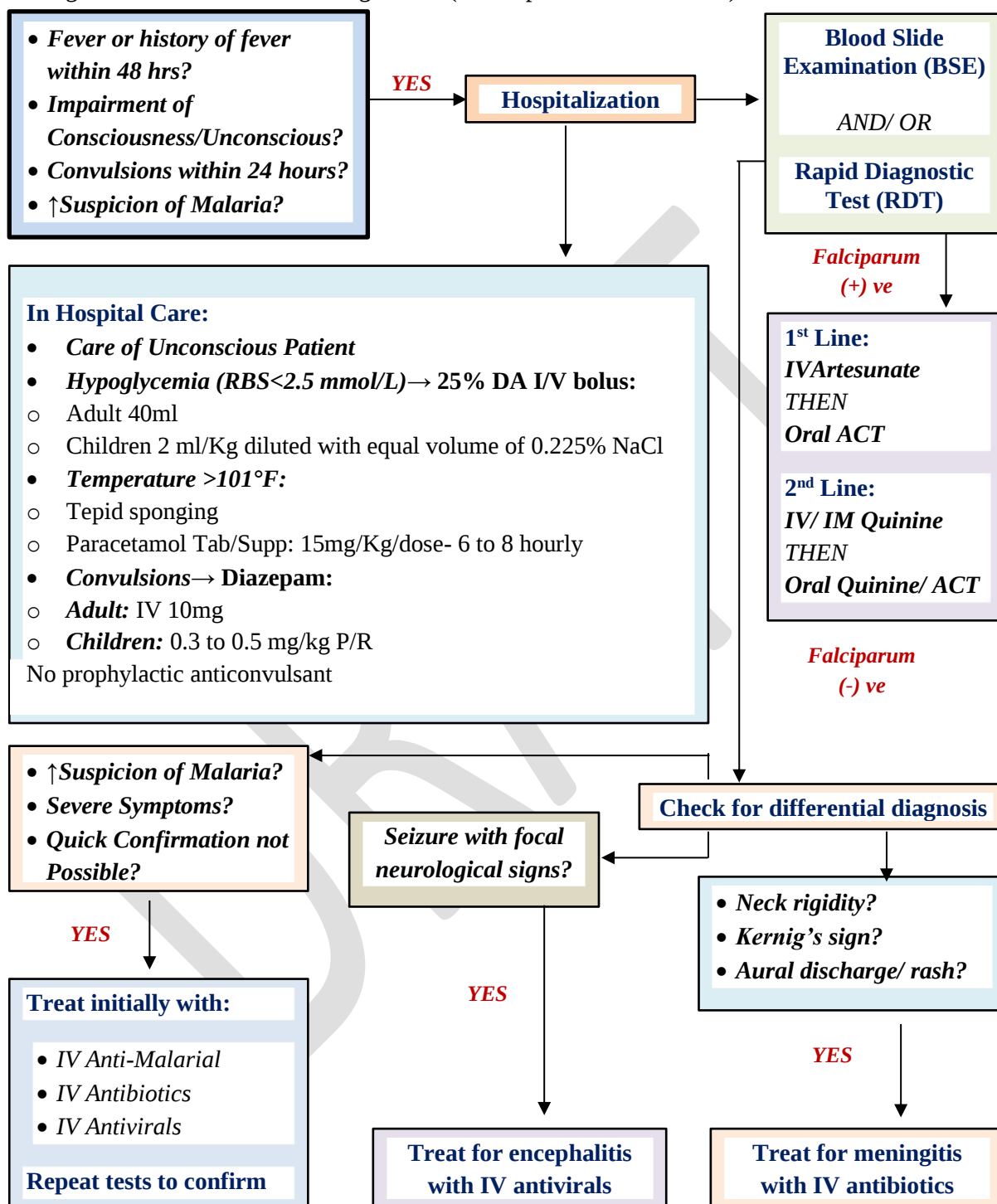
3. Lymphoedema of scrotum or penis: using scrotal sac, antibiotic, antifungal, reconstructive surgery.

4. Lymph Scrotum: Application of Sterile Bandage, repair of leaking, antibiotic, antifungal.

5. Chyluria: Low fat, high protein diet, plenty of water, avoid hard work, lifting, rest.

Malaria

Management of Cerebral Malaria algorithm: (P. falciparum endemic zone)



- ❖ Drug history is as important as BSE since it may be false negative. RDT is preferred in urgency.
- ❖ Antibiotics should be started in appropriate doses to cover the possibility of meningitis (even if CSF is inconclusive) and other unrecognized infections

Antimalarial Therapy for Cerebral Malaria:

Initial Therapy:

A. Artemisin Derivative: Injection Artesunate – Drug of choice

- Loading Dose:
2.4mg/kg IV at 0 hours, 12 hours and 24 hours
- Maintenance Dose:
2.4mg/kg IV daily until the patient can tolerate oral medication but not more than 5 days.

OR 2nd line

A. Quinine

- Loading Dose:
20 mg salt/kg IV over 4 hours in 5% DA (5-10 ml/kg) depending on the patient's overall fluid balance
- Maintenance dose:
After 8-12 hours of loading dose: 10mg salt/kg IV over 4 hours in 5% DA (5-10 ml/kg) over 4 hours, 8 to 12 hourly until the patient can tolerate oral medication.

In patients requiring more than 48 hours of parenteral therapy, reduce the quinine or quinine maintenance dose by a third to half (i.e. 5-7 mg salt/kg of body weight every 8-12 hourly for future 3 to 4 days.

Follow On Therapy:

A. Co-Artem (ACT) Dosing guidelines in table below:

No. of Tablets of ACT	Day	Dose No.	Time (Hrs)	5-<15 Kg	15-<25 Kg	25-<35 Kg	>35 Kg
	1	1st	0	1	2	3	4
		2nd	8	1	2	3	4
	2	3rd	24	1	2	3	4
		4th	35	1	2	3	4
	3	5th	48	1	2	3	4
		6th	60	1	2	3	4

Single dose primaquine

B. Quinine + Tetracycline/ Doxycycline: (Tetracycline and Doxycycline are contraindicated in children younger than 8 years old and in pregnant and lactating women)

- Quinine 7days + Tetracycline 7days (Q7+T7)
OR
- Quinine 7days + Doxycycline 7 days (Q7+D7)
OR
- Quinine 7days + Clindamycin 7days (Q7+C7)

Quinine Dosing Guidelines in table below

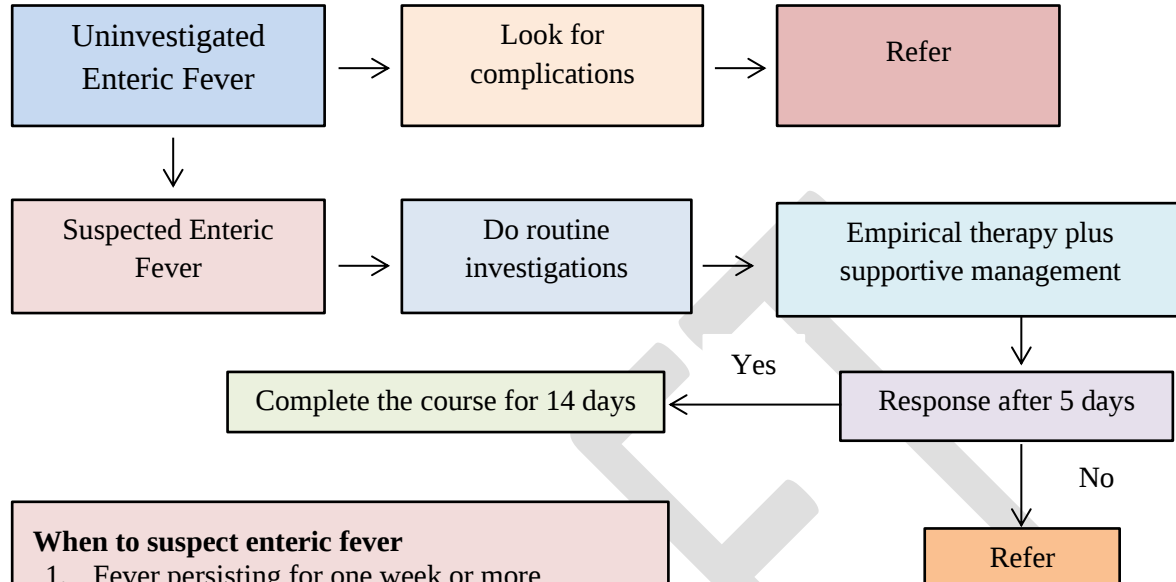
Quinine TDS Tab.300mg Sulphate	Body Weight (Kg)					Duration of Treatment
	3-9	10-19	20-29	30-39	40+	
	1/4	1/2	1	1 1/2	2	7days

Criteria for referral to higher center:

- Persistent Unconsciousness >48 hrs
- Uncontrolled Convulsions
- Respiratory Distress
- Persistent Hypotension despite fluid challenge.
- Severe Anaemia (Hematocrit < 15%, Hb% < 5g/dl)
- Oliguria/ AKI (Urine output <17 ml/hour or <400ml/24hours)
- Black Urine
- Deep Jaundice
- Pregnancy

Enteric Fever (Typhoid and Paratyphoid)

Management Algorithm for uninvestigated Enteric Fever



When to suspect enteric fever

1. Fever persisting for one week or more
2. No organ specific features except GI features

Routine investigations for suspected enteric fever

CBC with ESR, Blood for MP, Urine R/M/E,
Xray Chest P/A view, Blood for C/S if feasible

Antibiotics used in enteric fever:

Empirical Treatment

- Ceftriaxone: 2 gm/day for 10-14 days Plus/Minus Azithromycin: 500 mg BD for 7 days (for inpatients)
- Cefixime: 20 mg/kg/day BD for 14 days or Azithromycin: 500 mg BD for 7 days (for outpatients)

Fully Susceptible

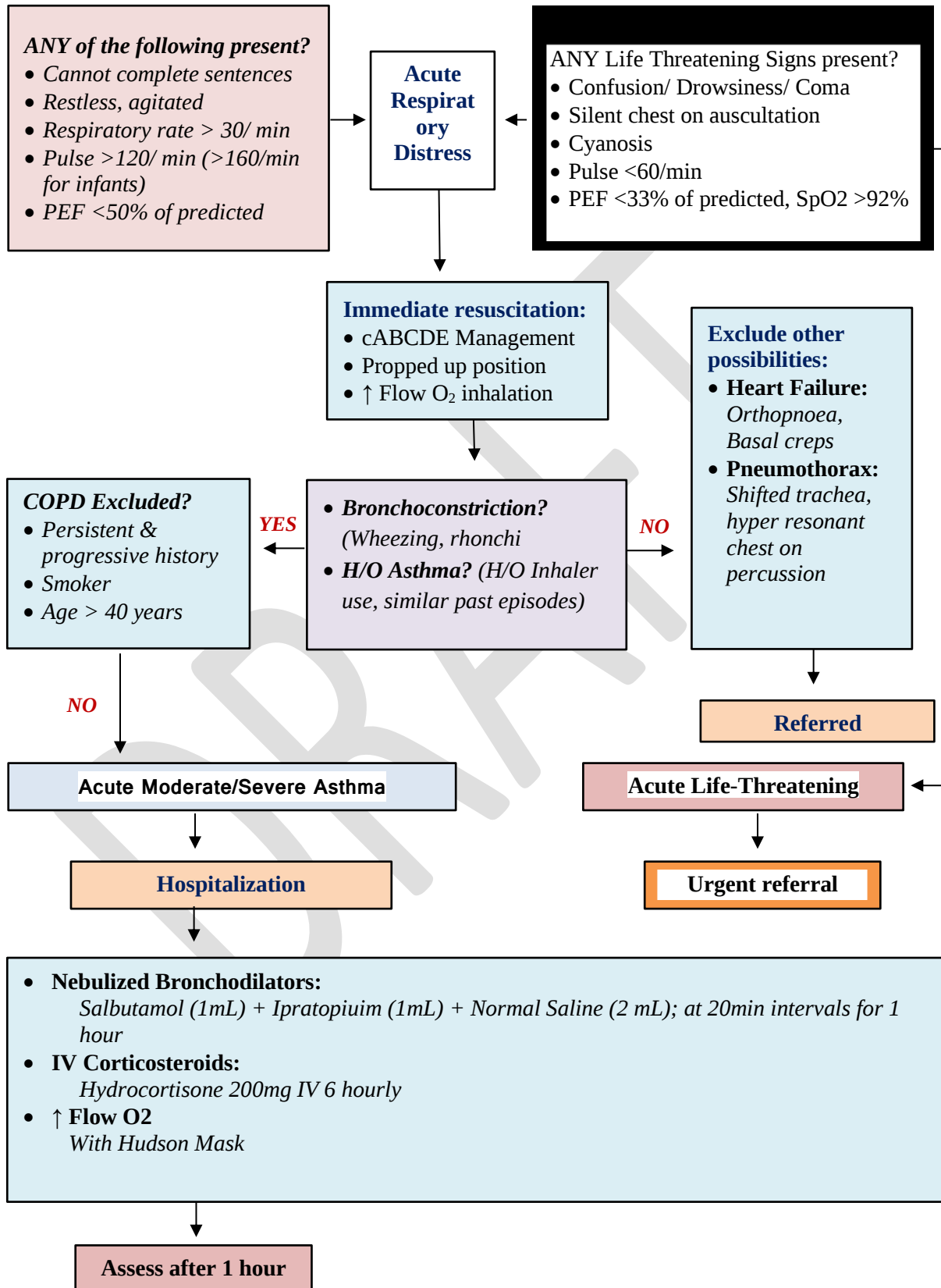
- Ciprofloxacin: 500 mg BD for 7 days OR
- Azithromycin: 1 gm/day for 7 days

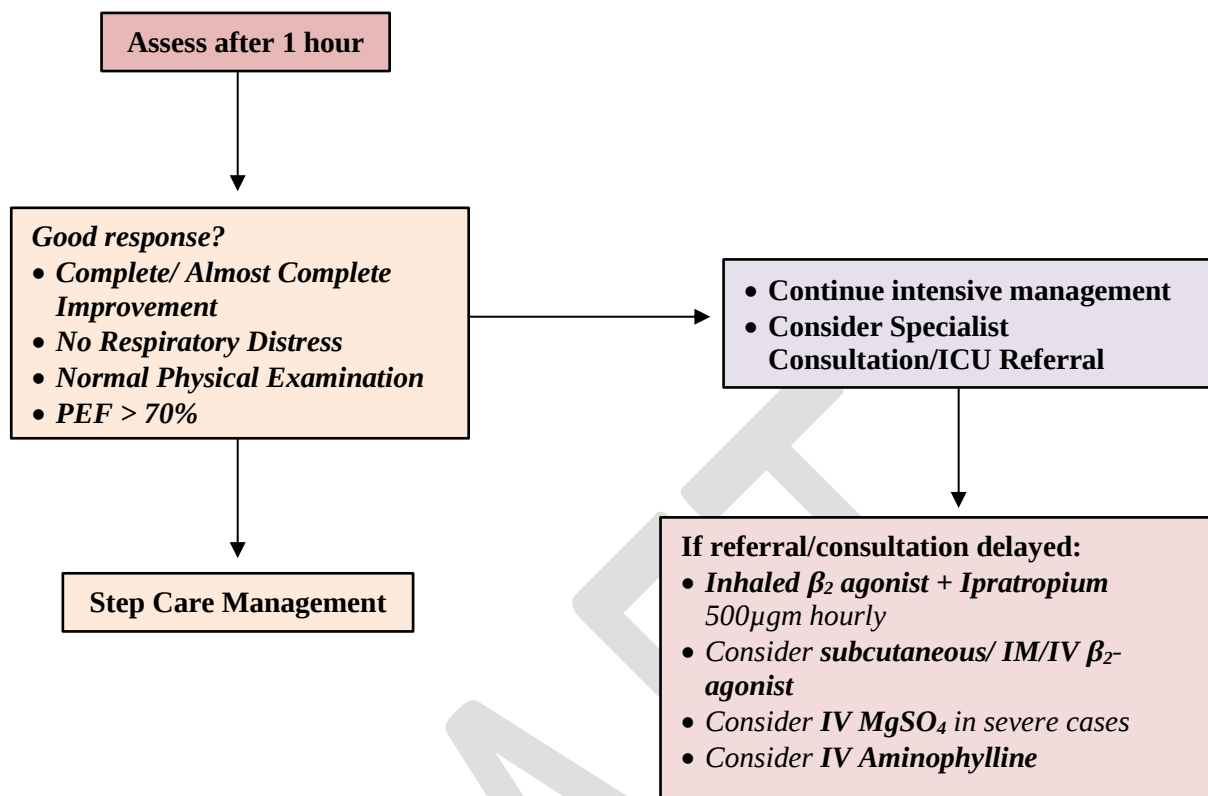
Multidrug Resistant Treatment

- Meropenem: 1 gm IV 8 hourly for 10-14 days

NB. Widal test is of little value in the diagnosis of enteric fever

Asthma (Status Asthmaticus)

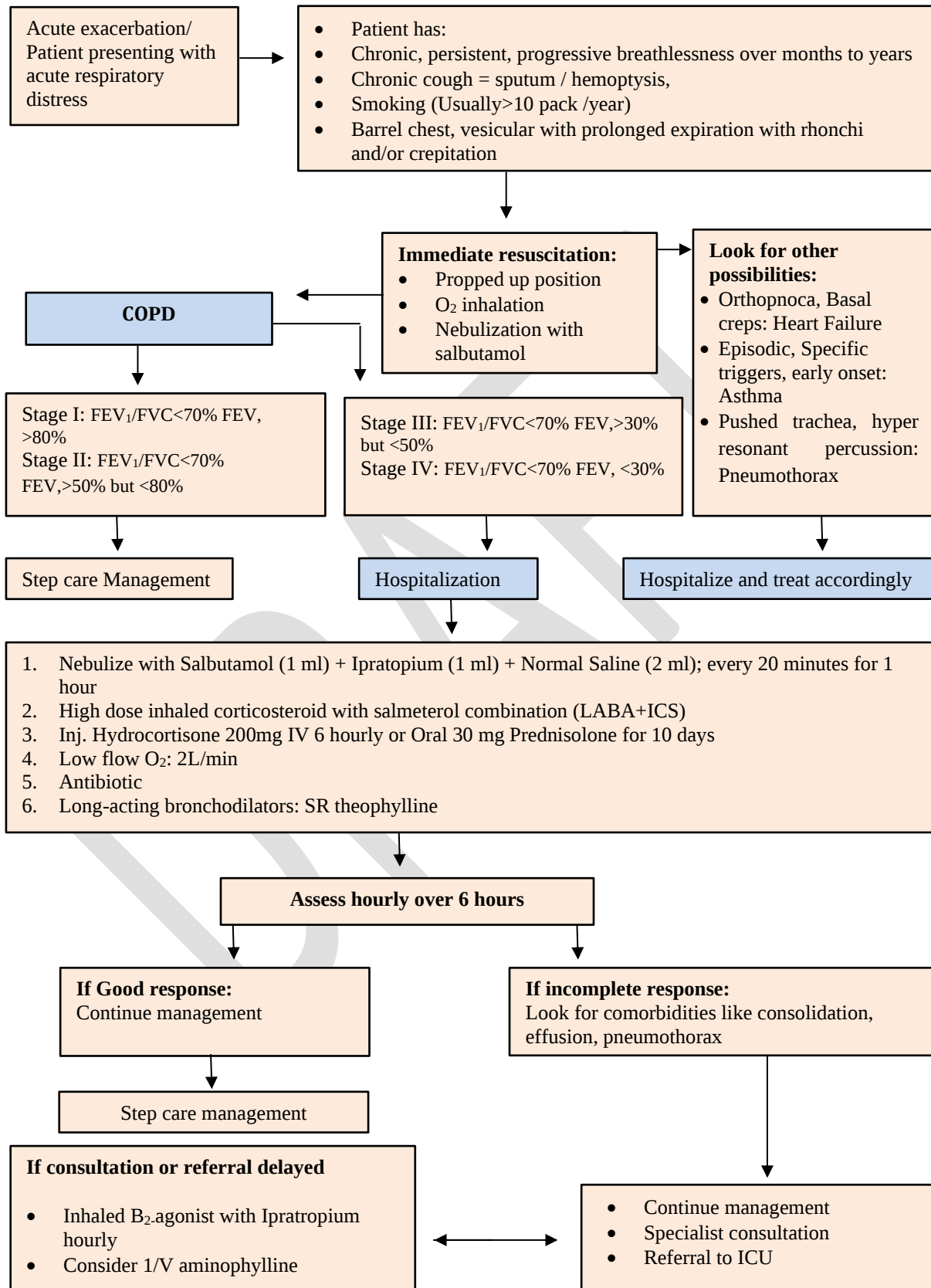




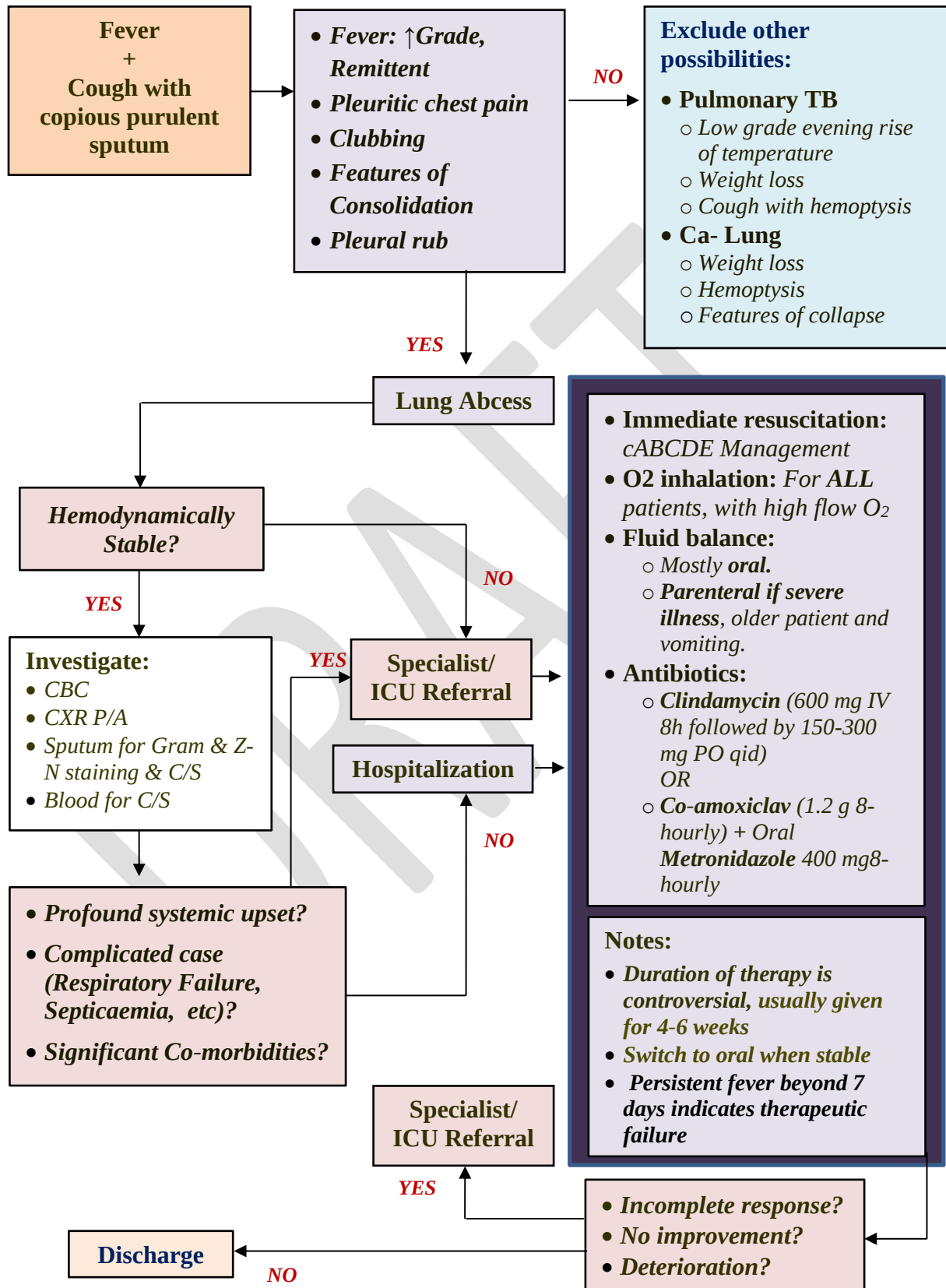
Therapies not recommended during acute attack:

- Sedatives
- Antitussive drugs
- Chest physiotherapy (may increase patient discomfort)
- Hydration with large volumes of fluid (may be necessary for younger children and infants)
- Antibiotics: *If overt infection*
- Antihistamines

Chronic Obstructive Pulmonary Disease (COPD)

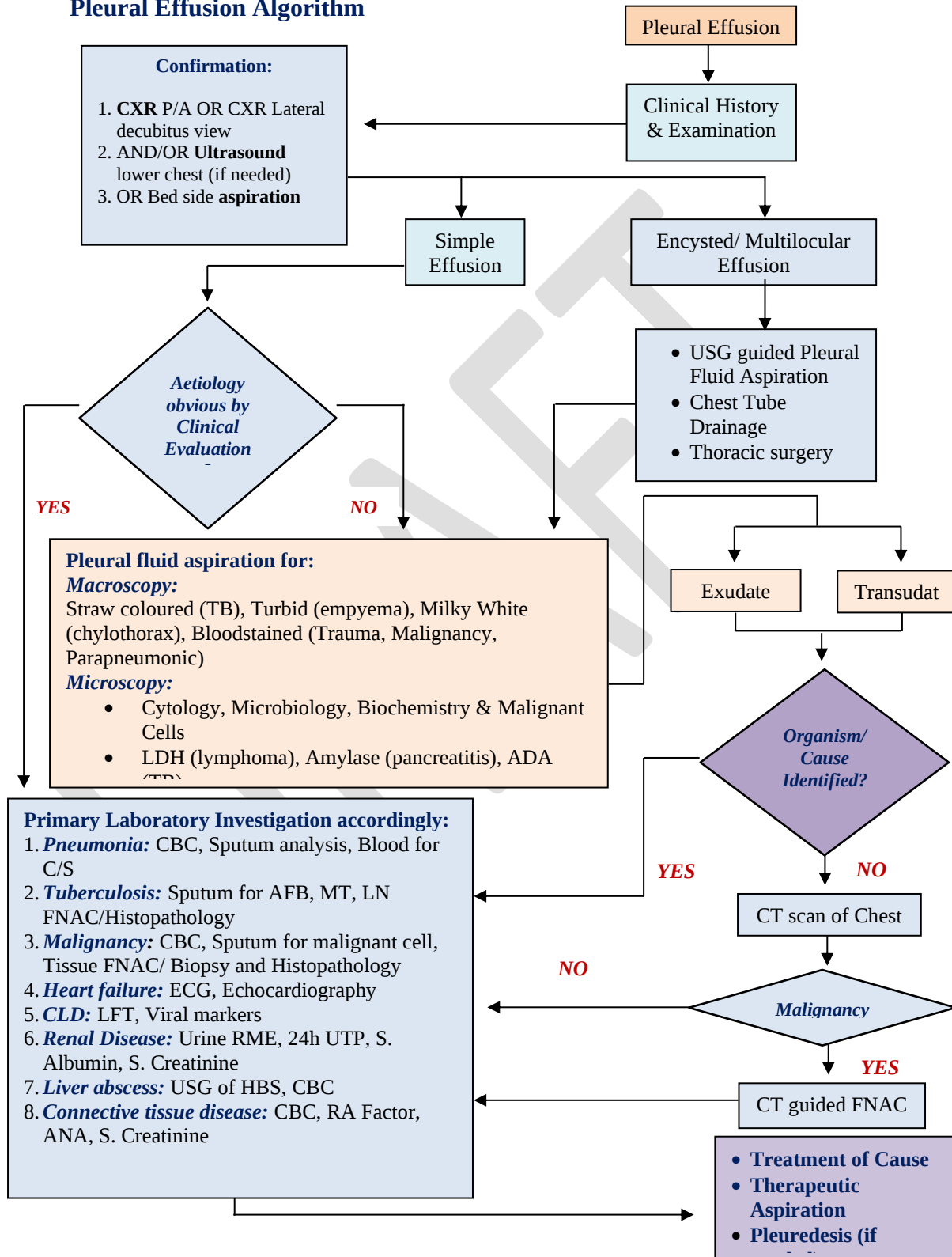


Lung Abscess



Pleural Effusion

Pleural Effusion Algorithm



History:

- **Parapneumonic:** Short duration, high fever, productive cough, pleuritic chest pain
- **Malignant:** Subacute onset, cough, hemoptysis, persistent chest pain, weight loss, smoker, recurrent
- **Tubercular:** Insidious onset, cough > 3wks, hemoptysis, weight loss, TB contact
- **Other Systemic diseases:** Present with their specific symptoms

Examination:

F/O Pleural effusion on affected side, plus:

- **Parapneumonic:** High temperature, F/O consolidation
- **Tubercular:** Low grade evening rise of temperature, lymphadenopathy (may be matted)
- **Malignant:** Weight Loss, Clubbing, lymphadenopathy (hard, irregular), Feature of (F/O) mass lesion/consolidation/collapse

Systemic diseases: Present with their specific symptoms

Acute Coronary Syndrome

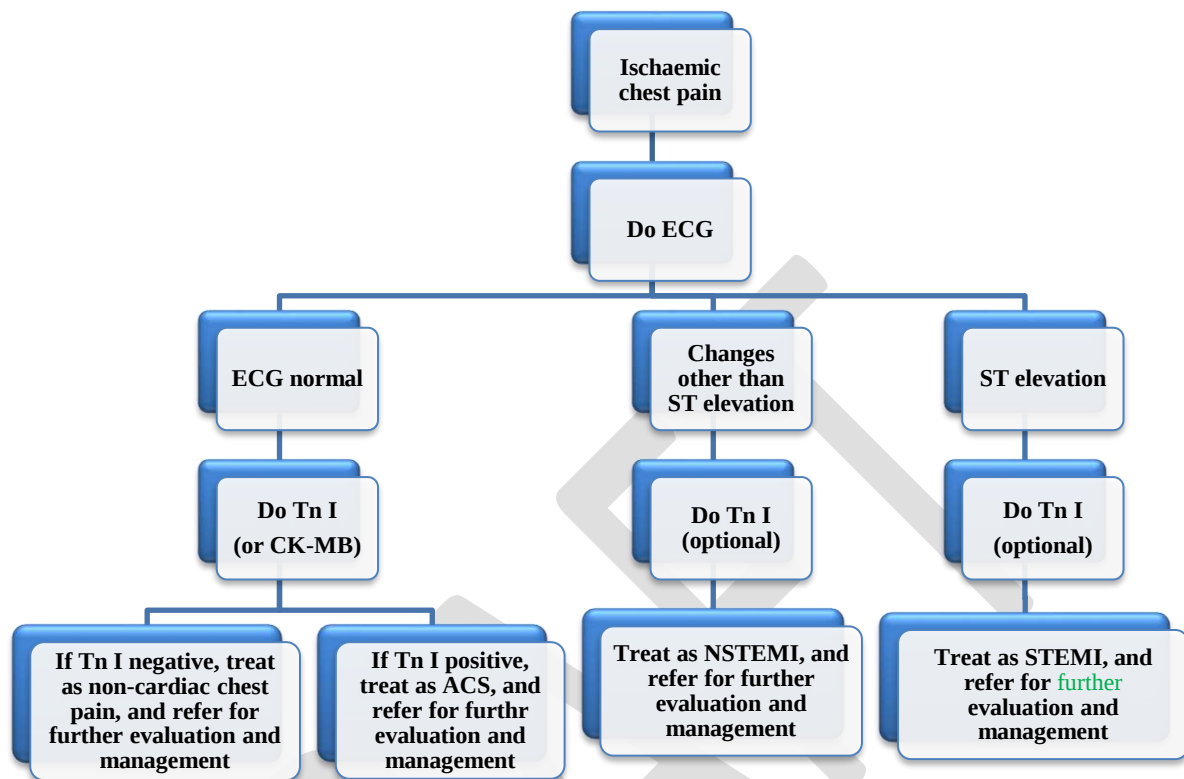
Acute coronary syndrome (ACS includes: unstable angina (UA), non-ST-segment elevation myocardial infarction (NSTEMI), and ST-segment elevation myocardial infarction (STEMI).

Table 4. Clinical differentiation and approach to chronic stable anginal and acute coronary syndrome.

Trait	Chronic stable angina	Acute coronary syndrome		
		Unstable angina	NSTEMI	STEMI
Chest pain	Yes	Yes	Yes	Yes
Mode of onset	Chronic, on and off	Acute	Acute	Acute
Precipitates by	Exertion	Spontaneous, at rest	Spontaneous, at rest	Spontaneous, at rest
Severity	Less	More	More	More
Relieved by rest	Yes	No	No	No
Relieved by nitrates e.g., GTN	Yes	No	No	No
ECG	Normal, or ST and T wave changes	Normal, or ST and T wave changes	ST and T wave changes	ST elevation, T inversion, Q waves
Troponin I	Normal/ negative	Normal/ negative	Elevated/ positive	Elevated/ positive
Treatment strategy	Medical management followed by CAG ± coronary revascularization	Medical management followed by CAG ± coronary revascularization	Medical management, including LMWH, followed by CAG ± coronary revascularization	Medical management + CAG + Primary PCI. Thrombolysis, if primary PCI not available

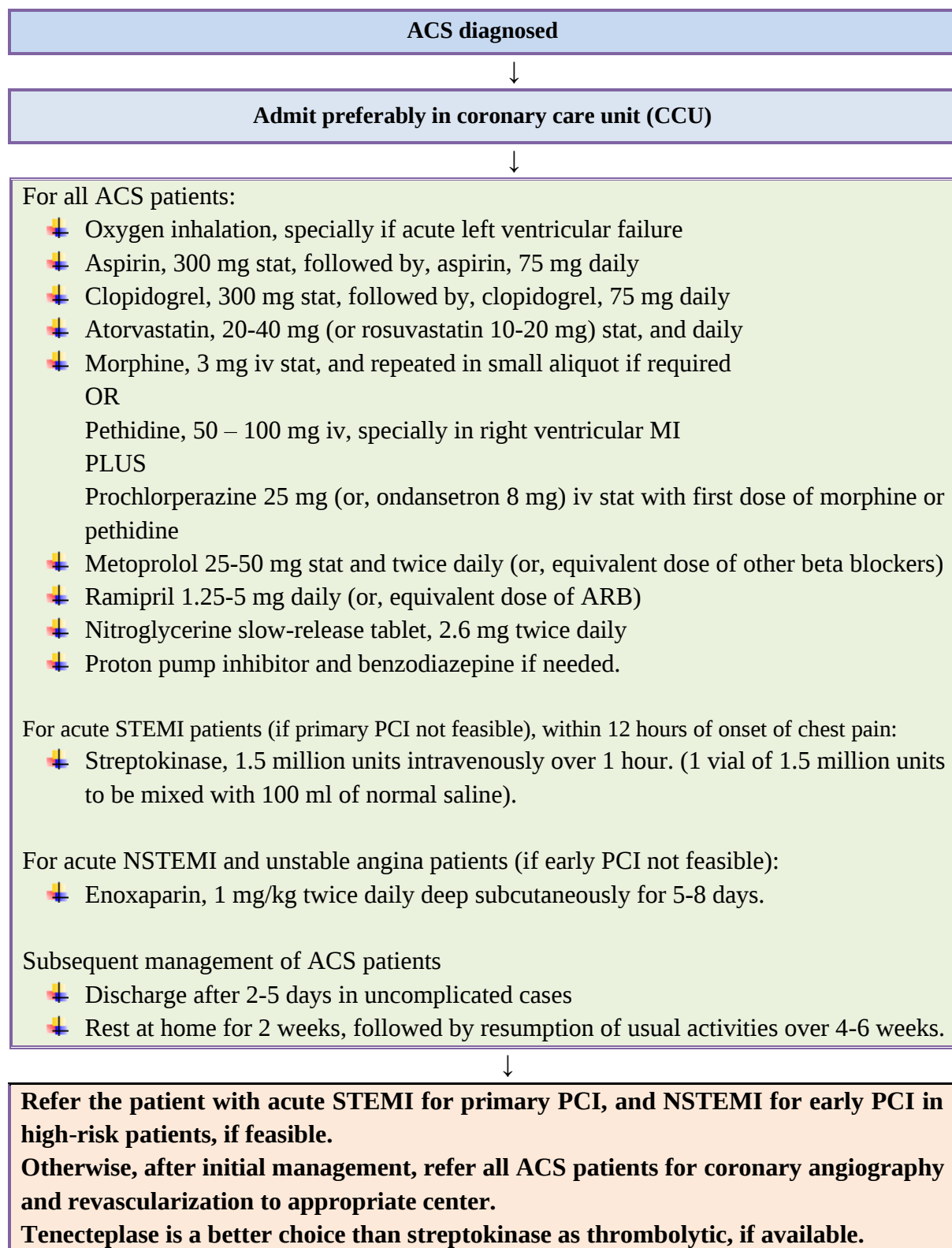
Here, NSTEMI= non-ST-segment elevation myocardial infarction, STEMI= ST-segment elevation myocardial infarction, GTN= glyceryl trinitrate, ECG= electrocardiogram, CAG= coronary angiography, PCI= percutaneous coronary intervention.

Figure 1. Approach to a patient with suspected acute coronary syndrome.



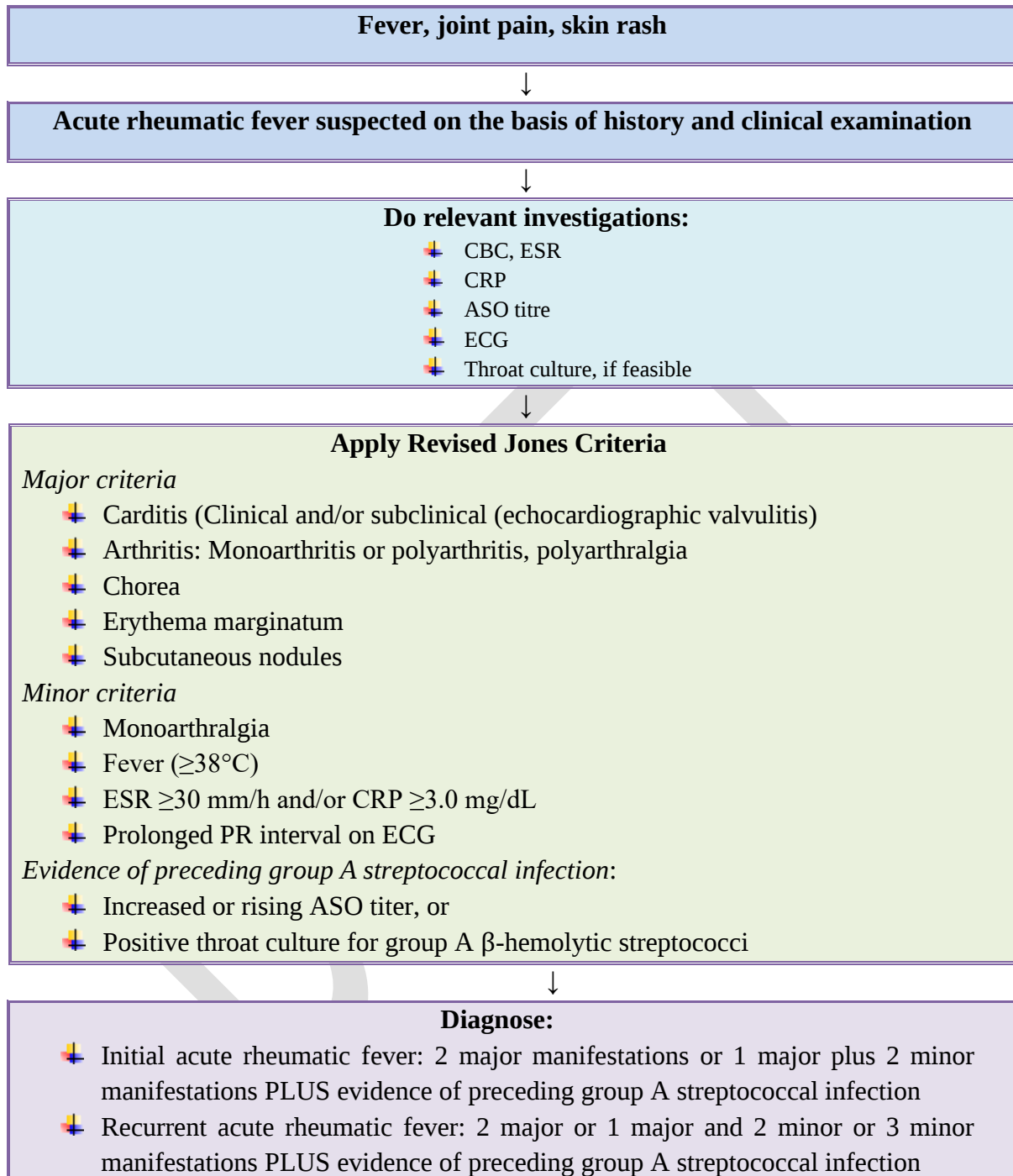
Here, Tn I = troponin I, CK-MB = creatine kinase myocardial band

Table 4. Treatment of acute coronary syndrome.



Acute Rheumatic Fever

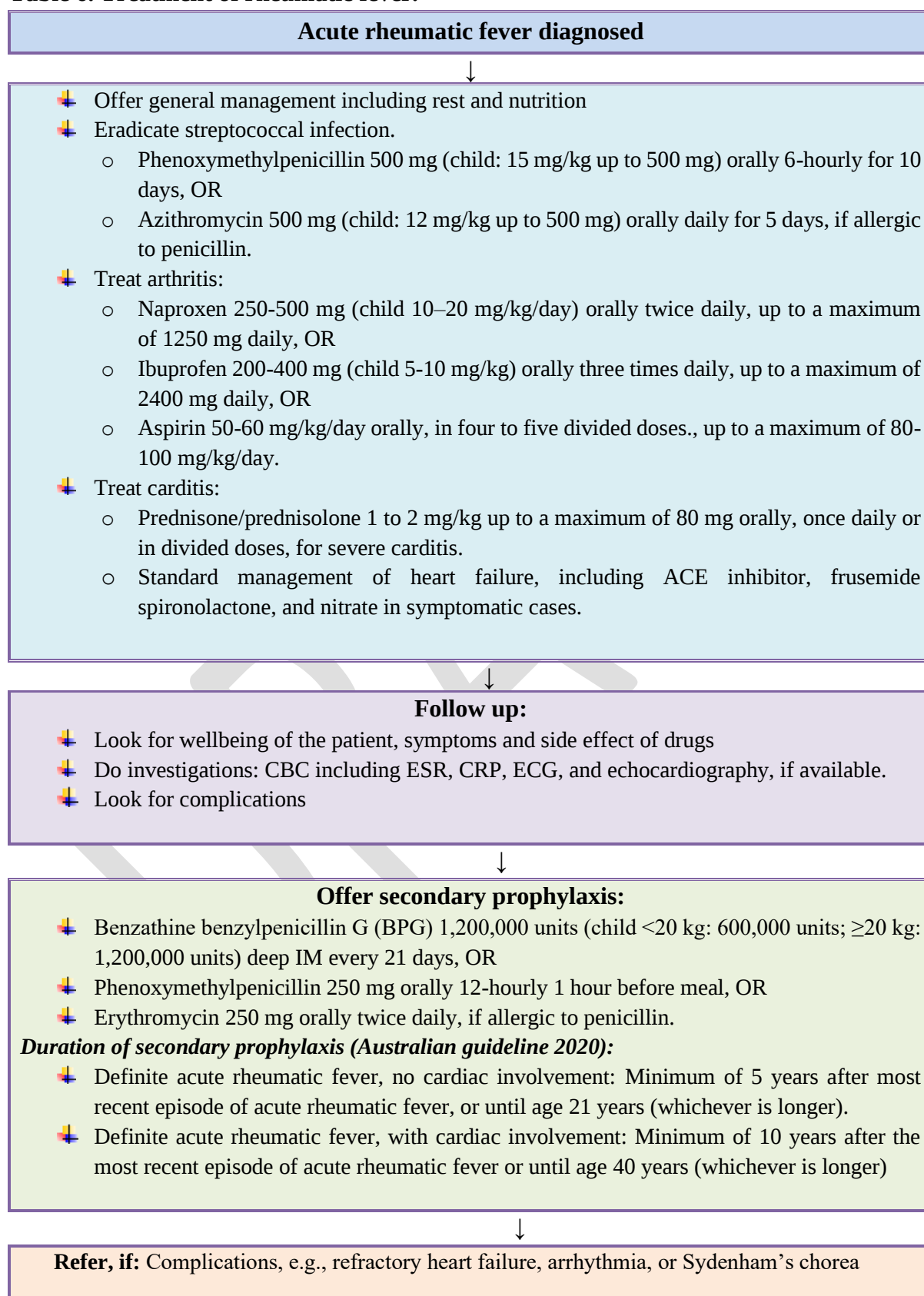
Table 5. Approach to a patient with suspected acute rheumatic fever.



Here, CBC = complete blood counts, CRP = C-reactive protein, ESR = erythrocyte sedimentation rate, ASO = Antistreptolysin O, ECG = electrocardiogram

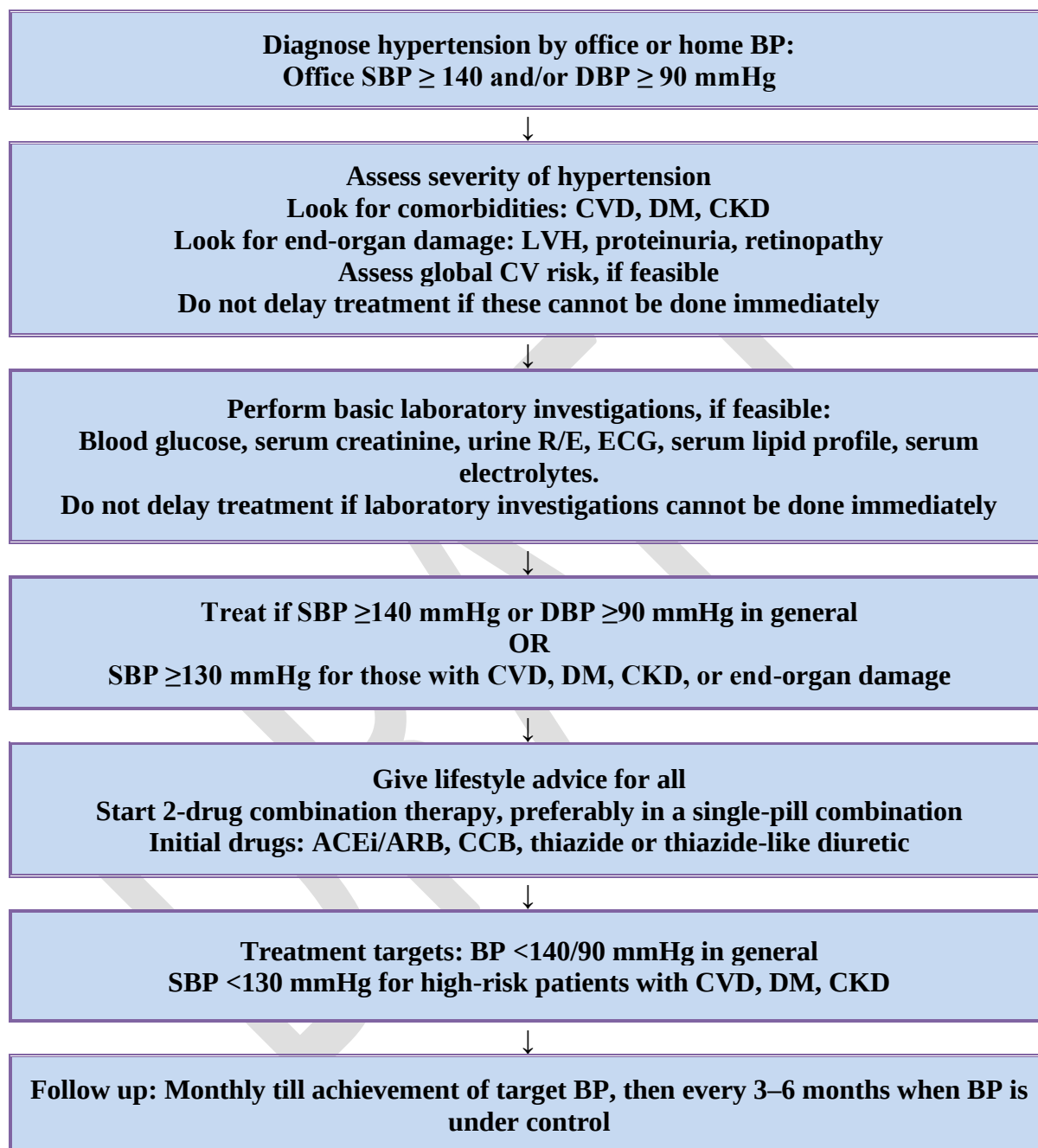
Note: Joint manifestations can only be considered in either the major or minor categories but not both in the same patient.

Table 6. Treatment of rheumatic fever.



Hypertension

Table 1. Approach to diagnosis and management of hypertension in adults.



Here, BP= blood pressure, SBP= systolic blood pressure, DBP= diastolic blood pressure, CVD= cerebrovascular disease, DM= diabetes mellitus, LVH= left ventricular hypertrophy, CV= cardiovascular, CKD= chronic kidney disease, R/E= routine examination, ECG= electrocardiogram; Here, ACEi/ARB= angiotensin converting enzyme inhibitor/angiotensin receptor blocker, CCB= calcium channel blocker.

Refer for further evaluation and management, if: ✚ Resistant hypertension ✚ Malignant hypertension ✚ Suspected secondary hypertension ✚ Onset of end-organ damage ✚ Hypertension in pregnancy ✚ Hypertension in children and adolescents	For hypertension in pregnancy, use: ✚ Labetalol ✚ α-Methyl dopa ✚ Nifedipine ✚ Amlodipine ✚ Verapamil (WHO, 2021)
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Table 2. Algorithm for initiation of treatment with a single-pill, fixed-dose combination (compliance increases with fixed dose single-pill combination)

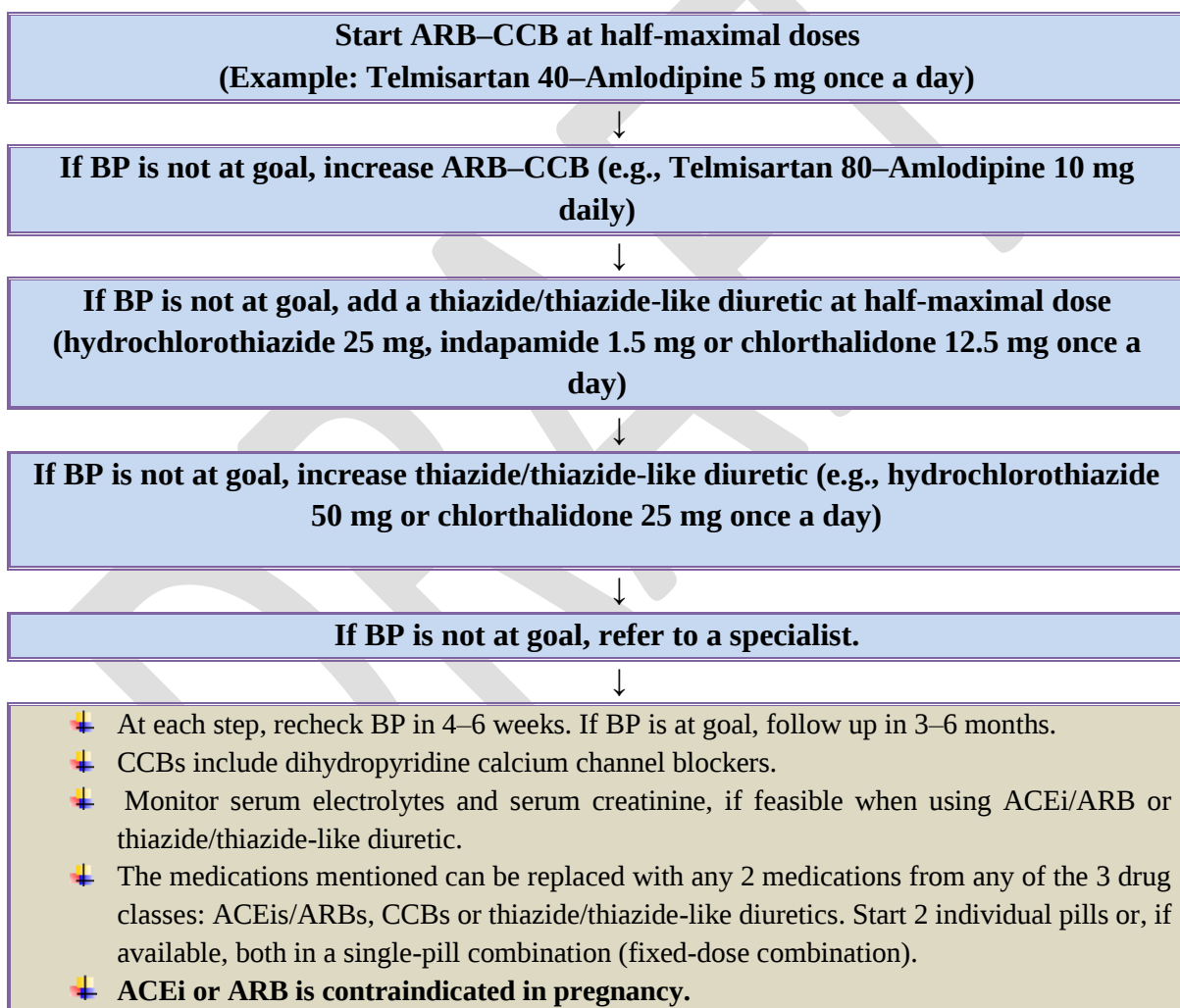
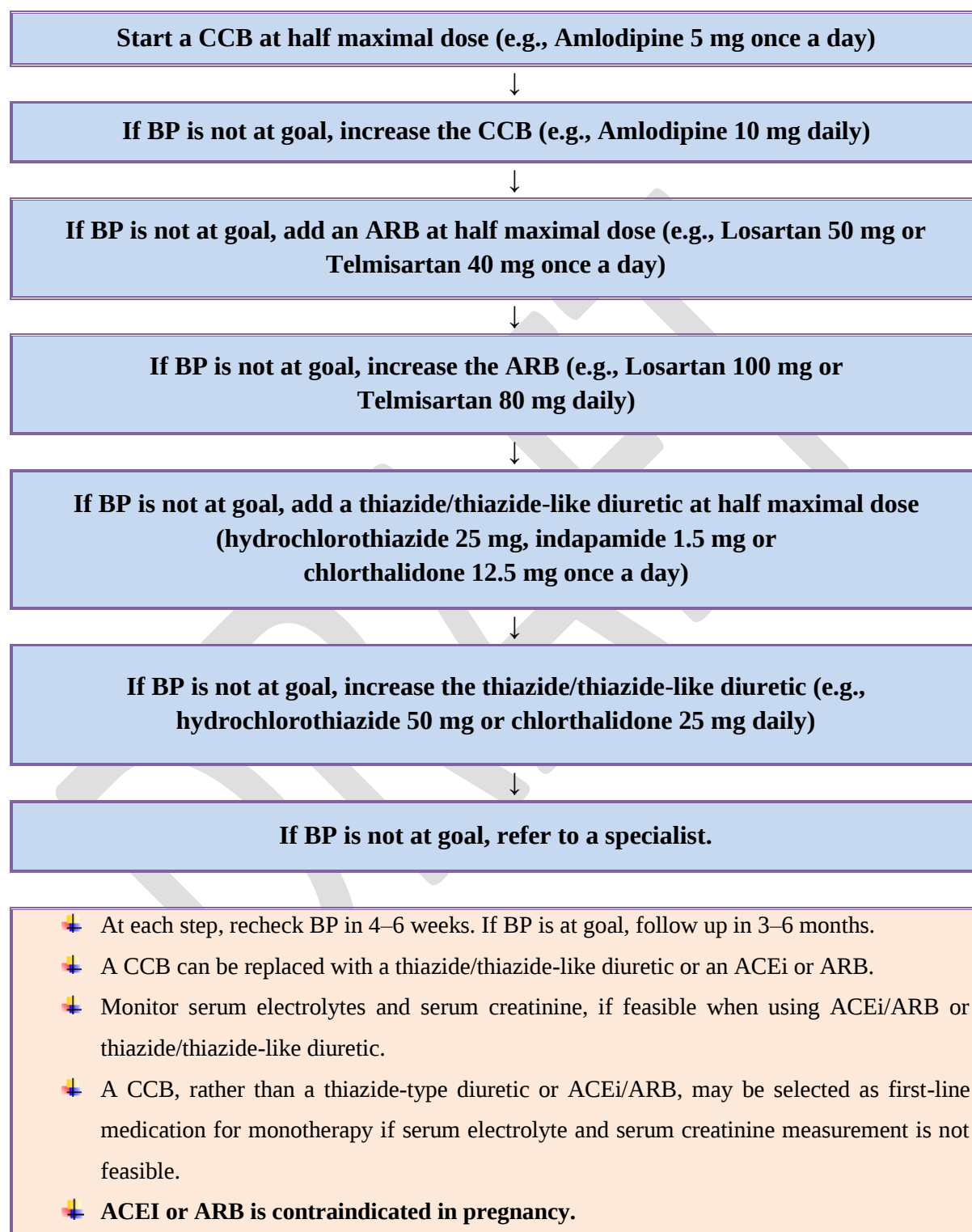
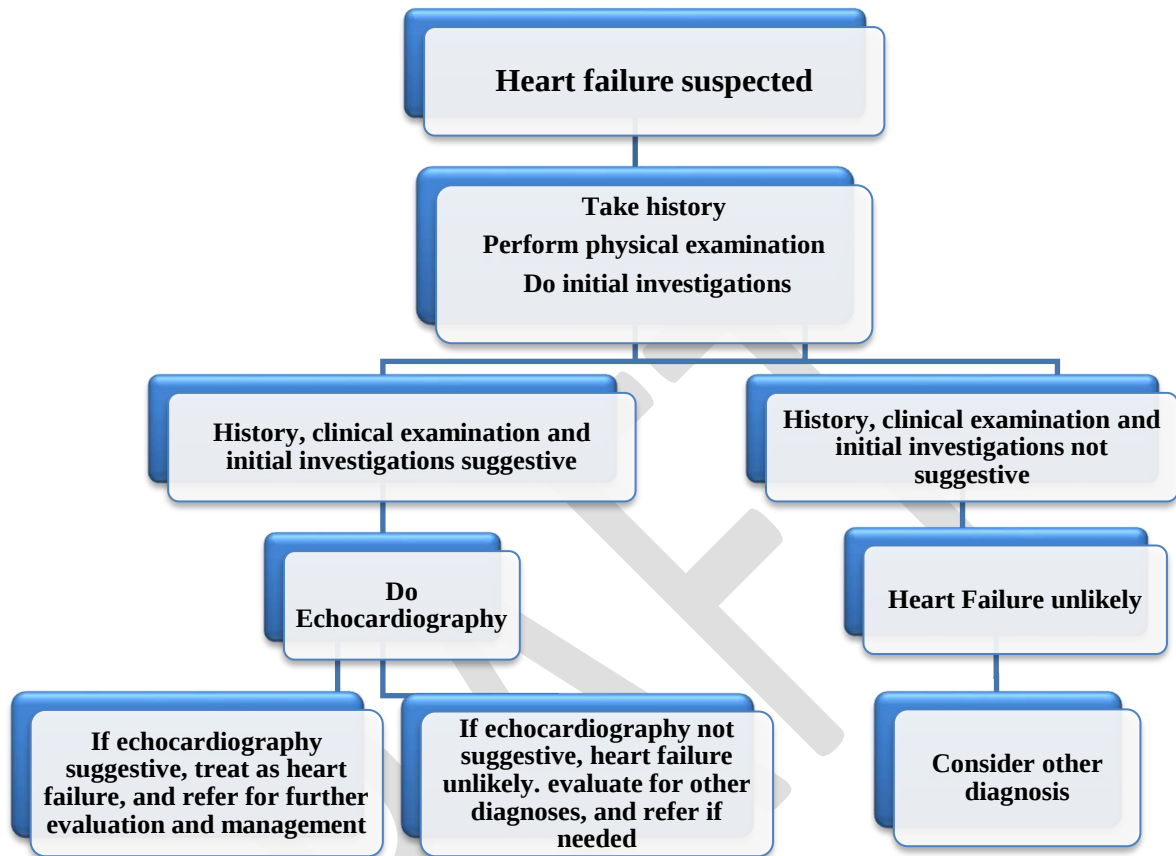


Table 3. Algorithm for initiation of treatment not using a single-pill combination (i.e., with monotherapy or free combination therapy)



Heart Failure

Figure 2. Approach to a patient with heart failure (not acute onset).



History, clinical examination and initial investigations

History

- ✚ Effort intolerance
- ✚ Exertional dyspnoea, orthopnoea, paroxysmal nocturnal dyspnoea
- ✚ Known coronary artery disease, hypertension

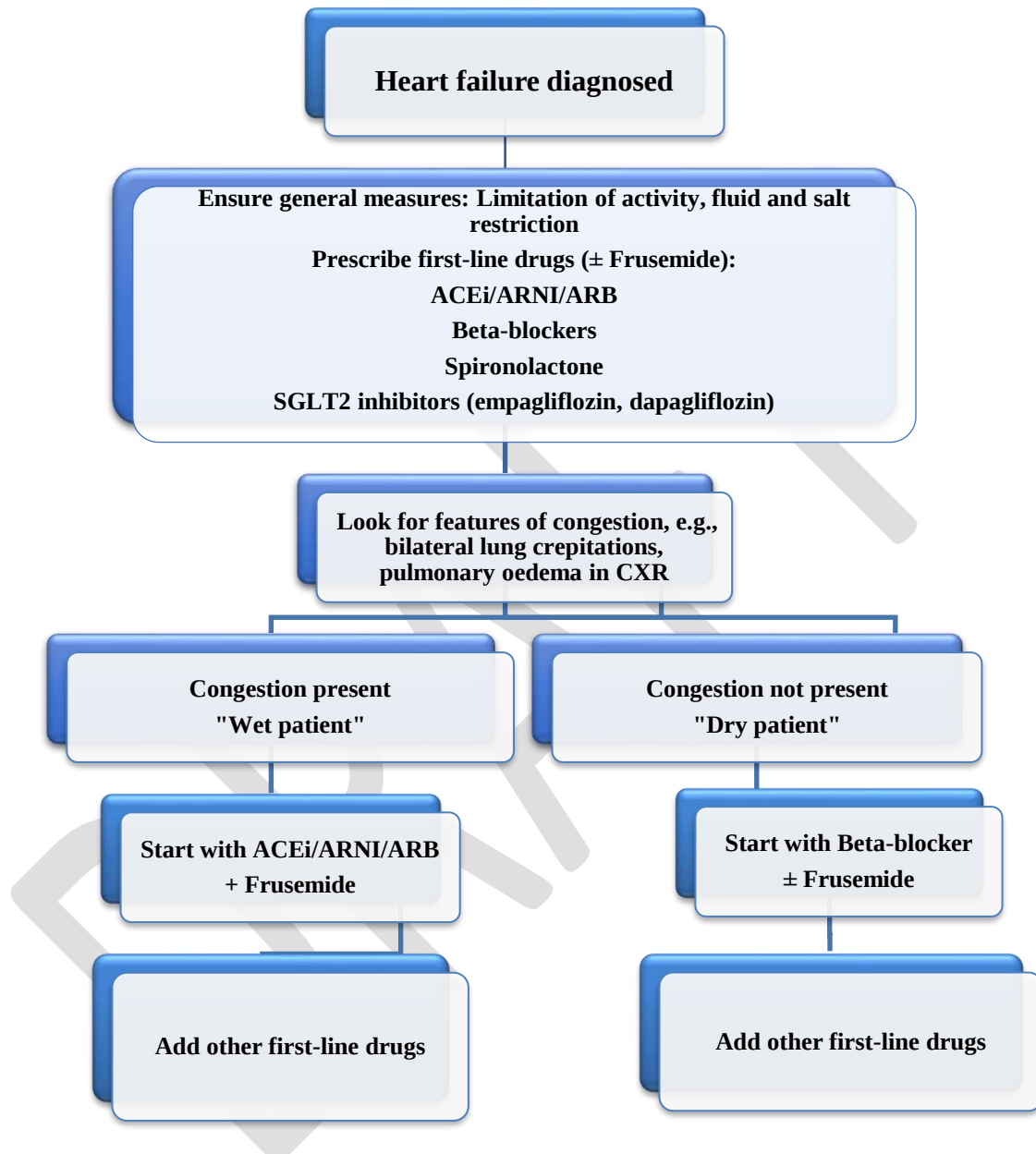
Physical examination

- ✚ Dependent oedema
- ✚ Raised JVP
- ✚ Lung crepitations
- ✚ Shifted and diffuse apex beat
- ✚ Murmur

Initial investigations

- ✚ ECG (any abnormality)
- ✚ Chest X-ray (pulmonary oedema, cardiomegaly)

Figure 3. Management of a patient with heart failure (not acute onset).



Here, ACEI = angiotensin-converting enzyme inhibitor, ARB = angiotensin receptor blocker, ARNI = angiotensin receptor-neprilysin inhibitor, SGLT2 = sodium-glucose cotransporter-2.

Table 7. Dose of selected drugs used in heart failure.

Drug	Starting Dose	Target Dose
Ramipril	1.25 mg daily	10 mg daily
Captopril	6.25 mg 3 times daily	50 mg 3 times daily
Losartan	25–50 mg daily	150 mg daily
Valsartan	40 mg twice daily	160 mg twice daily
Valsartan-sacubitril	50 mg twice daily, 25 mg twice daily if low BP	100 mg twice daily
Metoprolol succinate	12.5–25 mg daily	200 mg daily
Carvedilol	3.125 mg twice daily	25 mg twice daily
Bisoprolol	1.25 mg once daily	10 mg once daily
Spironolactone	12.5–25 mg daily	50 mg daily
Empagliflozin	10 mg daily	10 mg daily
Dapagliflozin	10 mg daily	10 mg daily
Furosemide	20–40 mg daily	120 mg daily

Left Ventricular Failure (LVF)

Acute left ventricular failure suspected



Look for symptoms and signs:

+ Symptoms:

- Severe breathlessness and cough
- Pink frothy sputum
- Chest tightness
- Orthopnea, paroxysmal nocturnal dyspnea (PND)

+ Signs:

- Central cyanosis
- Pulsus alternans
- Gallop rhythm
- Lung base crepitations

+ Initial investigations:

- ECG - Abnormal
- Chest X-ray – Pulmonary oedema



Immediate management:

- + Admission in hospital, preferably in CCU
- + Bed rest in propped up position
- + Oxygen inhalation
- + Furosemide, 20-80 mg IV stat and twice daily, 8 am and 4 pm
- + Morphine, 3 mg IV stat, and repeated in small aliquot if required, PLUS Prochlorperazine 25 mg (or, ondansetron 8 mg) IV stat with the first dose of morphine
- + Glyceryl trinitrate continuous infusion either by infusion pump or in IV drip, 9 – 200 µg/min as required, if blood pressure permits.
- + Management of cardiogenic shock if indicated.



Subsequent management:

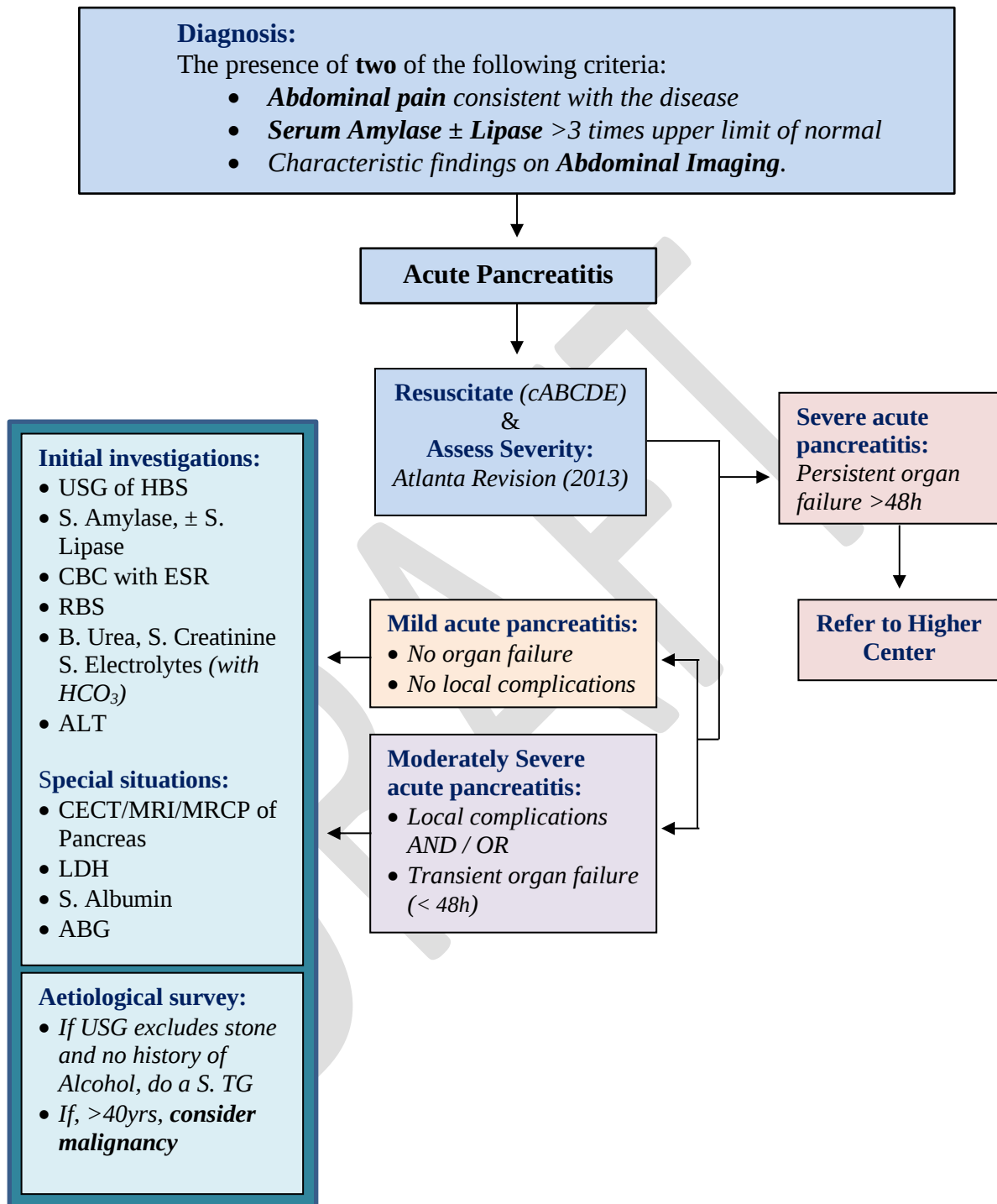
- + Do further investigations, e.g., echocardiography, and others, if available and as needed
- + Diagnose & treat underline causes e.g., revascularization for MI/ischemia control hypertension treat valvular heard disease etc.
- + Add ACE inhibitor
- + Add other first-line heart failure drugs, if indicated
- + Refer to appropriate center for further evaluation and management.

Note:

- ✚ Morphine: 1 ampoule contains 15 mg in 1 ml, 1 ml to be mixed with 14 ml distilled water, so the final strength is 1 mg/ml.
- ✚ Inj. Nitroglycerin, 50 mg/10 ml: 1 ampoule to be mixed with 40 ml of 5% dextrose in aqua, and to be infused with an infusion pump @ 0.4 ml - 1.4 ml/min, OR 1 ampoule to be mixed with 500 ml of 5% dextrose in aqua, and to be infused @ 10-30 drop/ min, usually not more than 24 hours.

DRAFT

Acute Pancreatitis



Initial Management:

A. Aggressive hydration:

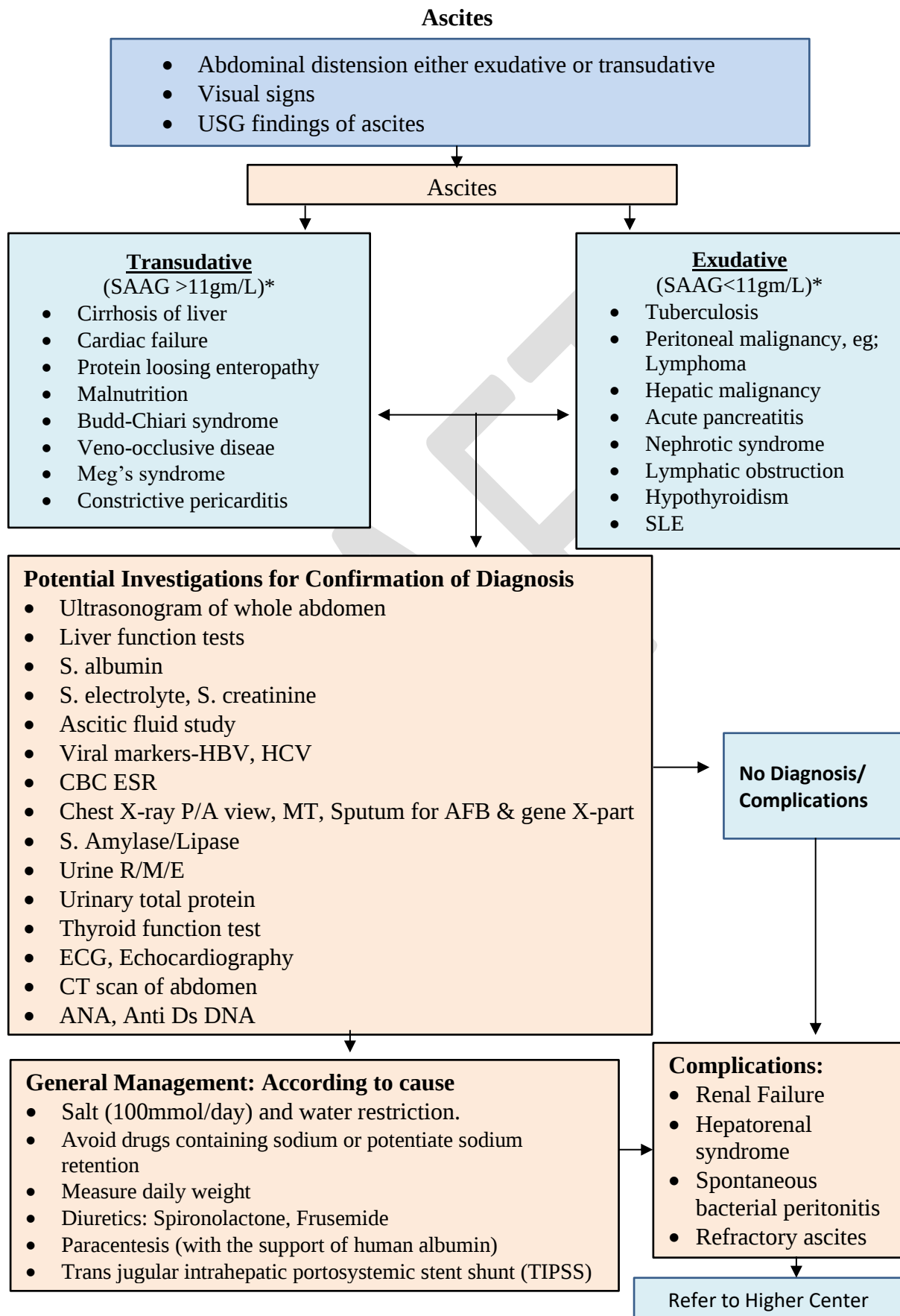
- IV infusion with 250-500 ml/hr Isotonic Crystalloid Fluid (***Lactated Ringer's solution preferred***) within first 12-24 h.
- Fluid requirements should be reassessed at frequent intervals within 6 h of admission and for the next 24 – 48 h
- Should be provided to all patients, unless cardiovascular and/or renal comorbidities exist
- Goal: ↓ BUN.

B. Nutrition:

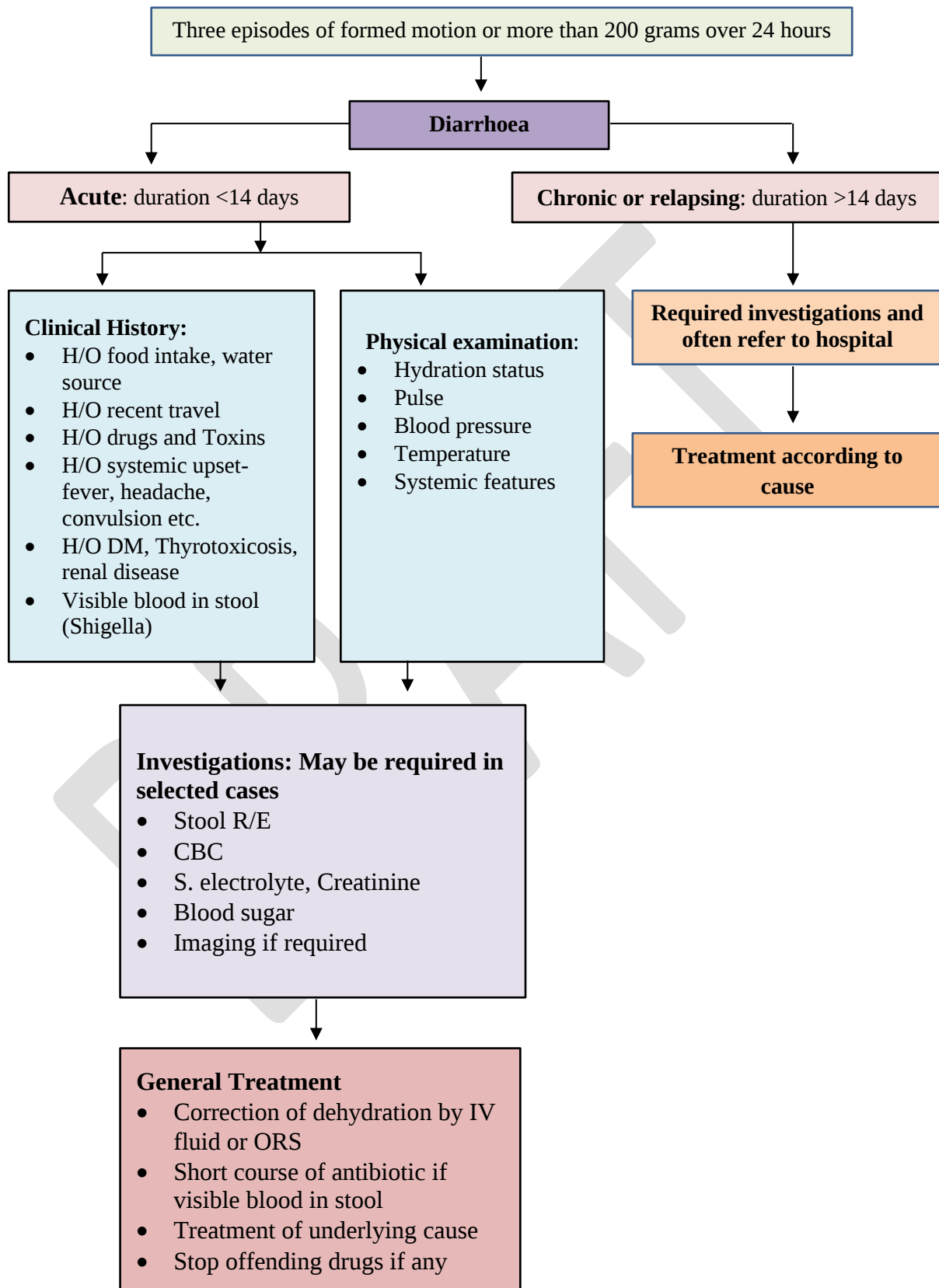
- **Mild AP:** Oral Feedings (*may be started immediately if there is no nausea and vomiting, and abdominal pain has resolved*)
- **Severe AP:** Enteral nutrition is recommended to prevent infectious complications. *Parenteral nutrition should be avoided if possible. Nasogastric delivery and nasojejunal route appear comparable in efficacy and safety.*

C. Antibiotics:

- Given for an extra pancreatic infection (*such as cholangitis, catheter-acquired infections, bacteremia, urinary tract infections, pneumonia, etc*)
-
- Routine use of prophylactic antibiotics in patients with Severe AP is **not recommended**
-
- **Infected necrosis:** Antibiotics known to penetrate pancreatic necrosis, such as carbapenems, quinolones, and metronidazole, may be useful e.g:
 - ✓ **Imipenem/Cilastatin:** 500-1000 mg IV 6hrly, 7-10 days
 - ✓ **Ceftriaxone:** 1-2gm IV 12 hrly
 - ✓ **Ciprofloxacin:** 400 mg IV 12 hrly, 7-10 days.



Diarrhoea and Gastroenteritis

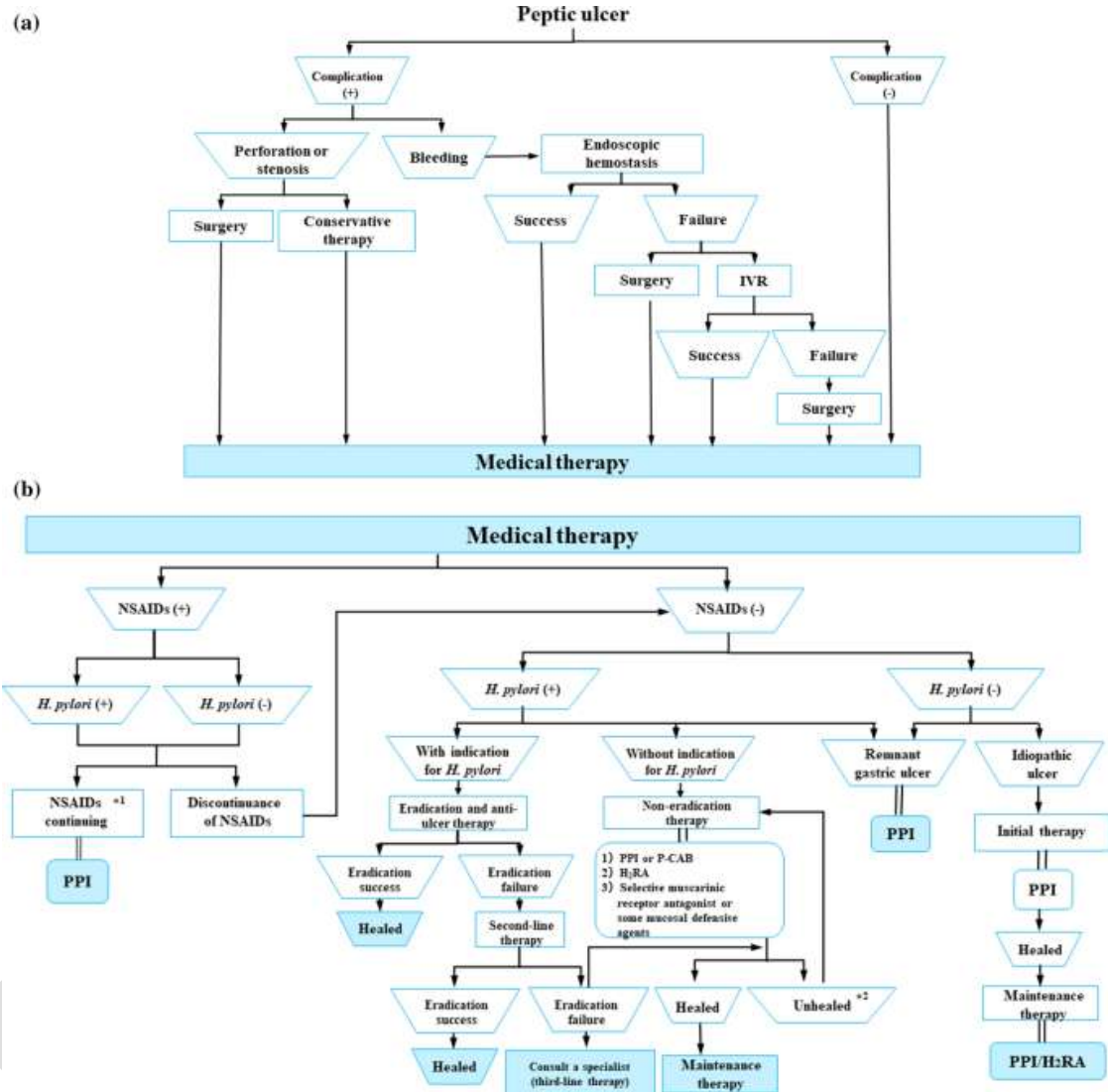


Peptic Ulcer Disease (PUD)

1. Diagnosis:

- a. History:
 - i. Recurrent abdominal pain: episodic, epigastric pain, having relations with food
 - ii. Vomiting, anorexia, nausea
 - iii. Early satiety
 - iv. H/O blood vomiting, passage of tarry stool
 - v. H/O NSAIDs
- b. Examination:
 - i. Anaemia
 - ii. Epigastric tenderness
 - iii. Duodenal point tenderness.
 - iv. Signs of complication: If profuse bleeding
 - Low BP, Rapid feeble pulse
 - Respiratory Rate increased.
 - Skin sweating, cold periphery
 - Urine output: decreased
- c. Alarm features:
 - i. Anemia
 - ii. Weight loss
 - iii. Vomiting
 - iv. Hematemesis and/or malaena
 - v. Dysphagia
 - vi. Palpable abdominal mass
- d. Investigations:
 - i. Perform endoscopy if
 - Alarm features present
 - Age > 55 years with any clinical feature
 - Persistent symptom after H. pylori eradication
 - ii. Tests for Helicobacter pylori, if age < 55 years

2. Treatment pathway:



IVR: Interventional radiotherapy with transcatheter arterial embolization

Source: Kamada T, Satoh K, Itoh T, et al. Evidence-based clinical practice guidelines for peptic ulcer disease 2020. J Gastroenterol (2021) 56:303–322

3. Drug therapy

- i. Anti-H. Pylori treatment (all patients with proven PUD with positive H. Pylori) : PPI, Amoxicillin 1gm and Clarithromycin 500 mg twice daily for 10 days
- ii. Maintenance: Usually not required after successful H. pylori eradication. For the minority who do require it, the lowest effective dose of PPI should be used (Ref. Davidson).

General measures: Cigarette smoking, aspirin and NSAIDs should be avoided. No special dietary advice is required.

Acute Liver Failure

Potentially reversible, severe liver injury, with an onset of hepatic encephalopathy and / or coagulopathy (INR>1.5) within 26 weeks of the appearance of the first symptoms and in the absence of pre-existing liver disease

ACUTE LIVER FAILURE

Common Clinical Features:

- Jaundice
- Hepatic Encephalopathy
- Feto hepaticus
- Asterixis (Flapping Tremors)
- Constructional Apraxia

Potential Investigations:

- CBC, S. creatinine, S Electrolyte, RBS
- Liver Function test, Prothrombin time
 - ✓ HBsAg, anti HBc IgM, Anti HEV, Anti HAV, Anti HCV
- Serology for CMV, EBV, HSV
- Caeruloplasmin, S. copper, Urinary copper, Slit lamp
- Autoantibodies: ANA, ASMA, LKM, SLA
- Immunoglobulin
- Toxicology screen of blood and urine
- USG of abdomen, Doppler of hepatic & portal vein
- Blood and urine C/S, Ascitic fluid study
- Chest X-ray

Common Causes:

- Infections:
 - ✓ Viral hepatitis: HBV, HCV, CMV, Yellow fever
 - ✓ Leptospirosis
- Drugs:
 - ✓ Paracetamol overdose
 - ✓ Halothane
 - ✓ Isoniazid
- Toxins:
 - ✓ Amanita phalloides mushroom
 - ✓ Carbon Tetrachloride
- Vascular:
 - ✓ Budd–Chiari syndrome
 - ✓ Veno-occlusive disease
- Others:
 - ✓ Alcohol
 - ✓ Fatty liver disease
 - ✓ Primary biliary cholangitis
 - ✓ Primary sclerosing cholangitis
 - ✓ Haemochromatosis
 - ✓ Autoimmune Hepatitis
 - ✓ α 1-Antitrypsin deficiency
 - ✓ Wilson's disease
 - ✓ Fatty liver of pregnancy
 - ✓ Malignancy

Management of Acute liver failure

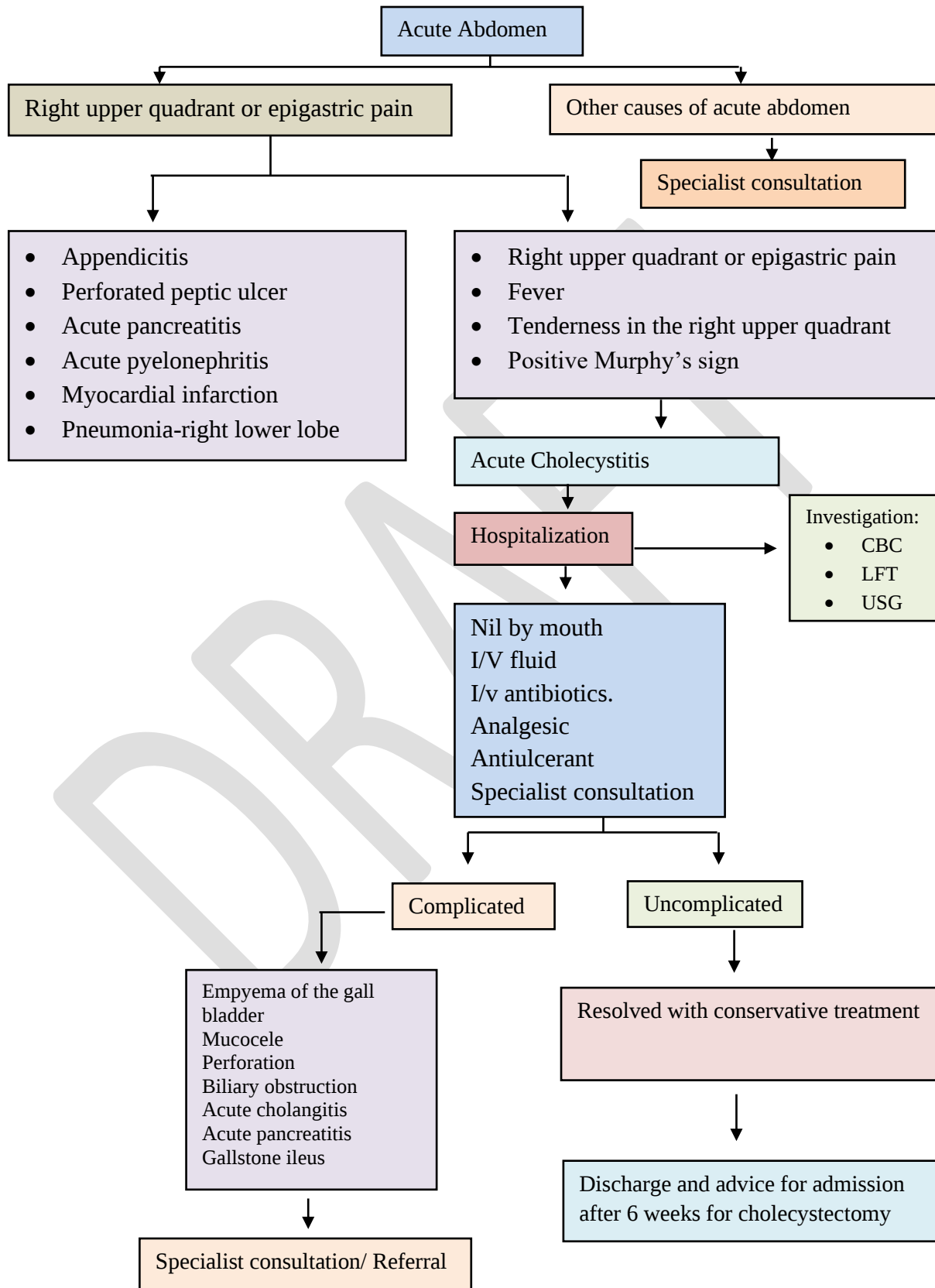
General Management:

- ICU Admission
- 20° head-up tilt
- Protect the airway with intubation
- NG Tube to avoid aspiration and remove any blood from stomach.
- Urinary Catheterization
- Ensure Adequate Nutrition
- Avoid sedative, Hypnotics, Diuretics
- Monitoring

Spesific management:

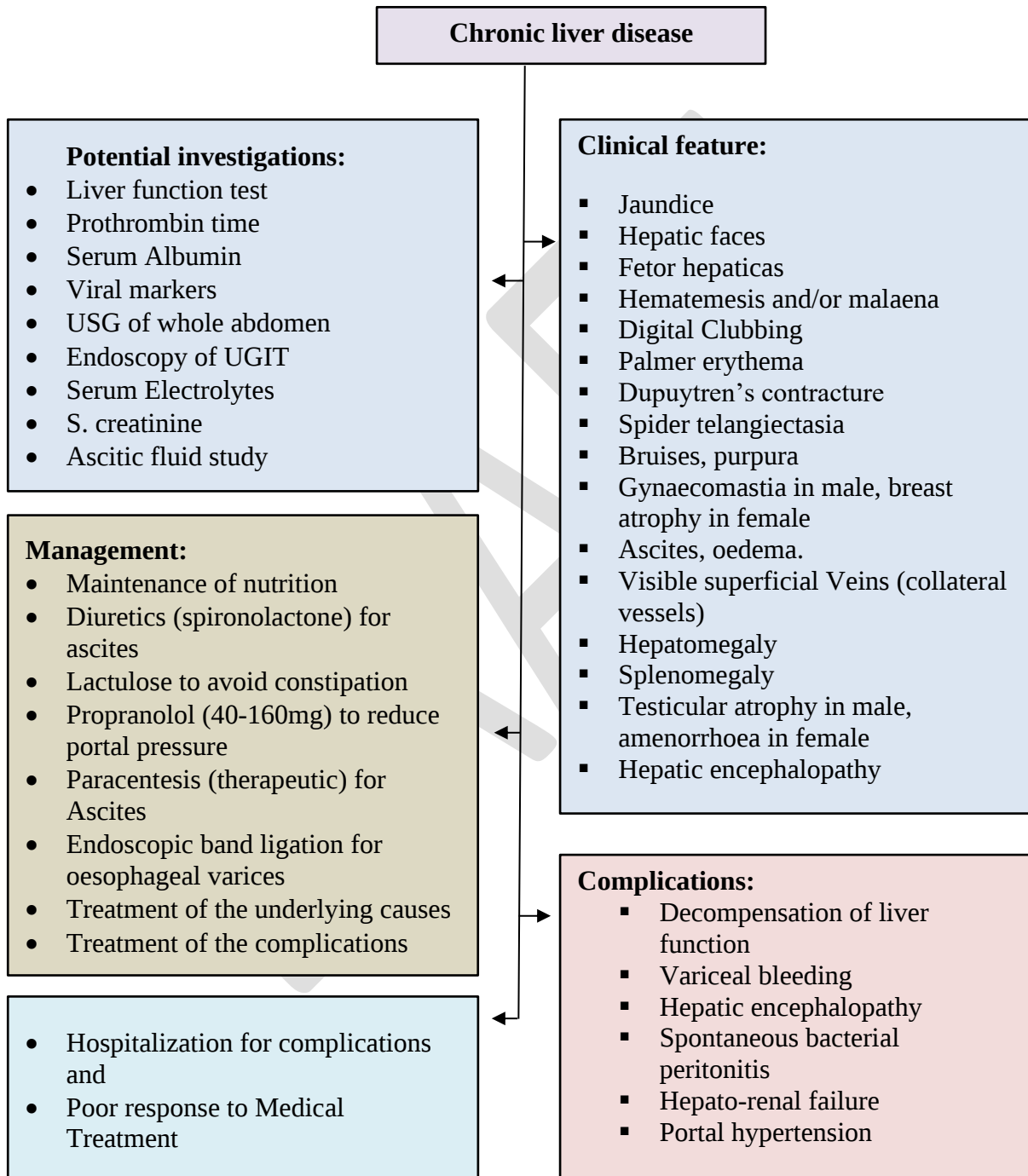
- Syp. Lactulose: 15-30ml 3 times daily
- Inj. Cefotaxim/ Ceftriaxon
- Tab Rifaxamin 400mg TDS
- Thiamine And Folate supplements
- IV PPI for Stress Ulcer Prophylaxis
- N-acetylcysteine , specially in paracetamol overdose
- Avoid hypoglycemia by IV 10% DA
- Control seizure
- Treatment of underlying cause
- Liver transplantation

Acute Cholecystitis

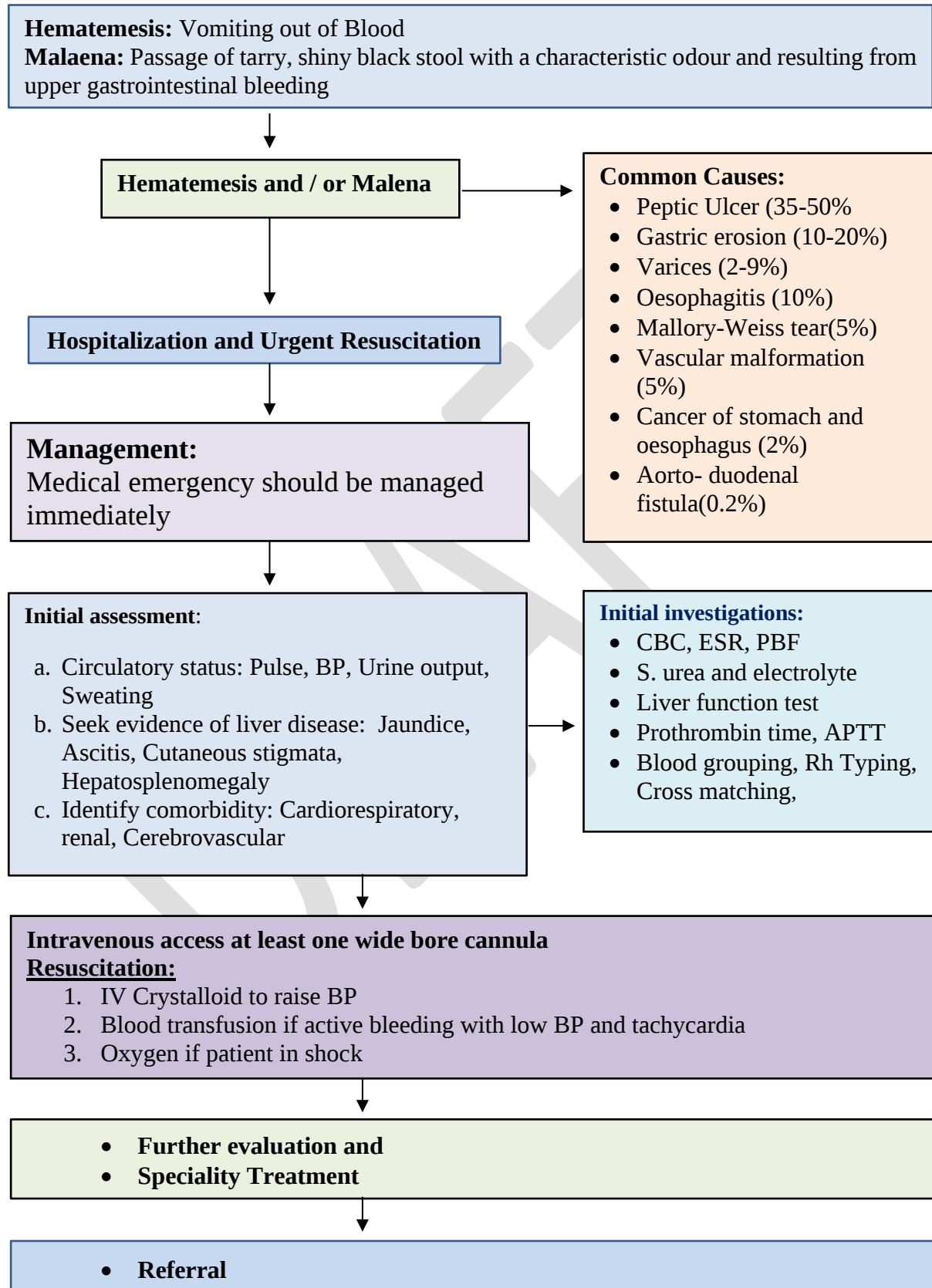


Chronic Liver Disease (CLD)

CLD may be defined as progressive destruction of the liver parenchyma over a period greater than 6 months leading to fibrosis and cirrhosis.



Hematemesis & Malena



Seizure/Epilepsy

- A seizure is any clinical event associated with frequent episode of convulsions (tonic-clonic) and / or impaired consciousness or abnormal motor or sensory phenomena
- Recurrent episode of Seizure is called epilepsy
- More than two episodes of seizure in 24 hrs is called Status Epilepticus (Medical Emergency)

Clinical features:

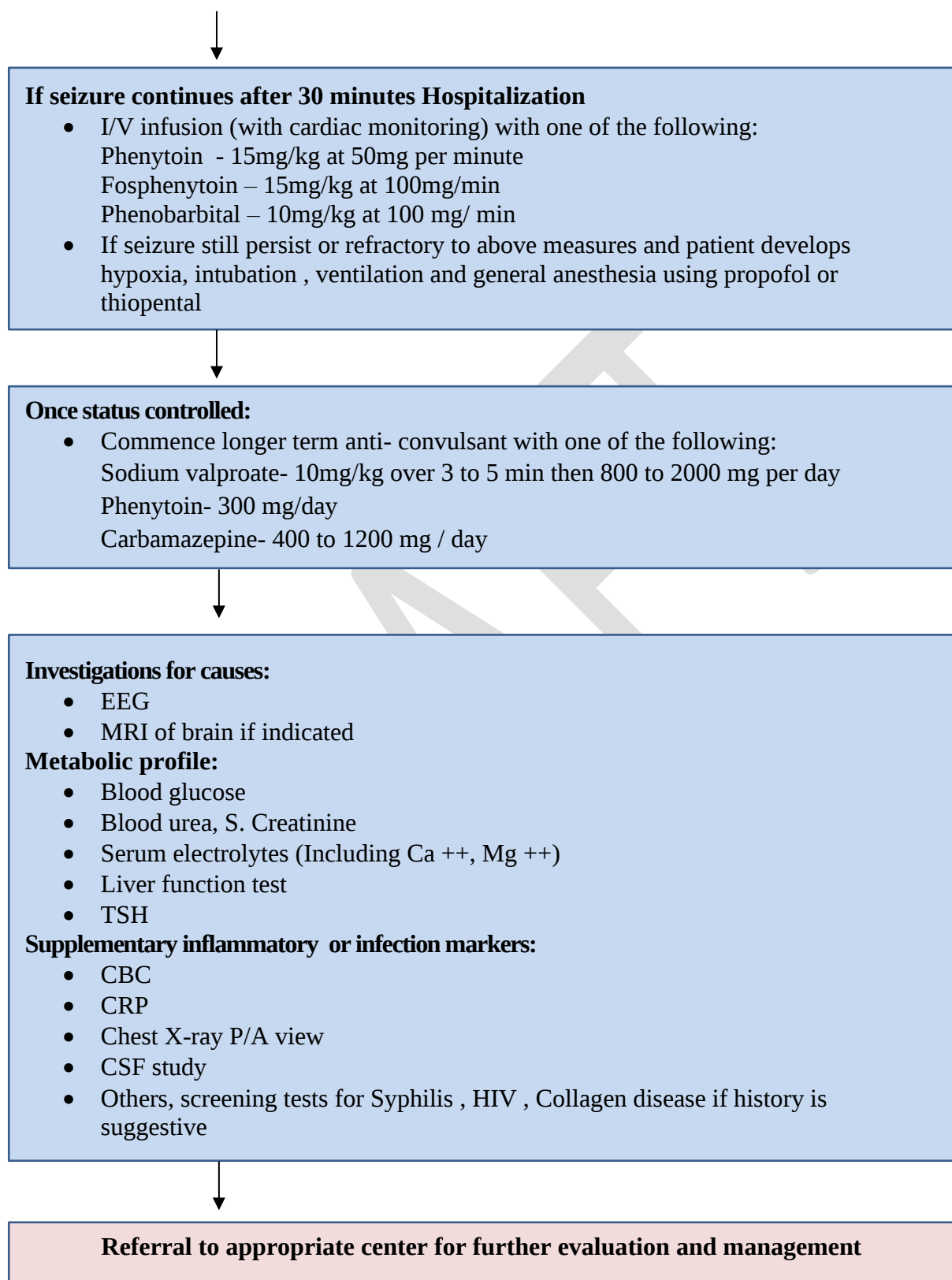
- Previous history of seizures/ epilepsy
- Aura +/-
- Sudden onset of symptoms
 1. Impairment of consciousness
 2. Sudden fall, injury
 3. Tonic-clonic convulsion
 4. Tongue bite
 5. Incontinence of urine/ faeces
 6. Retrograde amnesia
 7. Visual disturbance
 8. False recognition
 9. Burning, tingling in limbs
 10. Jerking of any part of the body

Epilepsy

Exclude Syncope and Conversion disorder

Initial management:

- Move person away from danger (fire, water, machineries)
- After convulsions cease turn into recovery position (semi-prone)
- Ensure clear airway. Don't put anything inside mouth.
- If convulsions continue more than 5 minutes or recur without person regaining consciousness (status epilepticus) requires urgent medical management .
- Give Oxygen to offset cerebral hypoxia
- Give intravenous anti-convulsant (ex. Diazepam 10 mg) repeat once after 15 minutes
- Draw blood for glucose, urea, electrolytes (including Ca^{++} , Mg^{++}) , liver function test
- Admit the patient if status epilepticus, preferably in ICU, monitor BP , respiration, blood gases (intubation and ventilation if appropriate)



Meningitis

Meningitis

Clinical features:

- Fever
- Headache
- Photophobia
- Altered consciousness
- Meningococcal rash
- Neck rigidity/ positive Kernig's sign

Resuscitate and stabilize the patient

Initial tests:

- CBC
- Blood for C/S
- RBS
- S. Creatinine
- S. Electrolytes
- ALT
- ECG
- Throat swab for gram stain and C/S

Empirical antibiotics
(Box : A and B below)

**Lumbar puncture or
Imaging (CT Scan)**

Box: A Treatment of pyogenic meningitis of unknown cause	
1. Adult aged 18 – 50 years without typical meningococcal rash	• Cefotaxime 2g i.v 6-hourly <i>or</i> • Ceftriaxone 2g i.v. 12-hourly for 10 – 14 days
2. Patients in whom penicillin-resistant pneumococcal infection is suspected	As for (1) but add: • Vancomycin 1g i.v. 12-hourly <i>or</i> • Rifampicin 600 mg i.v. 12-hourly
3. Adults aged over 50 years and those in whom <i>Listeria monocytogenes</i> infection is suspected (brain-stem signs, immunosuppression, diabetic, alcoholic)	As for (1) but add: • Ampicillin 2g i.v. 4-hourly <i>or</i> • Co-trimoxazole 5mg/kg i.v. daily in two divided doses
4. Patient with a clear history of anaphylaxis to β-lactams	• Chloramphenicol 25mg/kg i.v. 6-hourly <i>plus</i> • Vancomycin 1g i.v. 12-hourly
Adjunctive treatment	
Dexamethasone 0.15mg/kg 4 times daily for 2 – 4 days.	

Box: B Chemotherapy of bacterial meningitis when the cause is known		
Pathogen	Regimen of choice	Alternative agent(s)
<i>N. meningitidis</i>	Benzympenicillin 2.4g i.v. 6-hourly for 5 – 7 days	Cefuroxime, Ampicillin Chloramphenicol*
<i>Strep. Pneumoniae</i>	Cefotaxime 2g i.v 6-hourly <i>or</i> Ceftriaxone 2g i.v. 12-hourly for 10 – 14 days	Chloramphenicol*
<i>Strep. Pneumoniae</i>	As for sensitive strains but add Vancomycin 1g i.v. 12-hourly <i>or</i> Rifampicin 600 mg i.v. 12-hourly	Vancomycin <i>plus</i> Rifampicin Moxifloxacin Gatifloxacin
<i>H. influenzae</i>	Cefotaxime 2g i.v 6-hourly <i>or</i> Ceftriaxone 2g i.v. 12-hourly for 10 – 14 days	Chloramphenicol*
<i>Listeria monocytogenes</i>	Ampicillin 2g i.v. 6-hourly <i>plus</i> Gentamycin 5mg/kg i.v. daily	Ampicillin 2g i.v. 4-hourly <i>plus</i> Co-trimoxazole 50mg/kg i.v. daily in two divided doses
<i>Strep. Suis</i>	Cefotaxime 2g i.v. 6-hourly <i>or</i> Ceftriaxone 2g i.v. 12-hourly for 10 – 14 days	Chloramphenicol*

MENINGITIS (TUBERCULAR)

Tubercular meningitis



Symptoms:

- Headache
- Vomiting
- Low-grade fever
- Lassitude
- Depression
- Delirium
- Behaviour changes

Signs:

- Meningism (may be absent)
- Oculomotor palsies
- Papilloedema
- Depression of conscious level
- Focal hemisphere signs

Staging of severity:

- Stage I (early): non-specific symptoms and signs without alteration of consciousness.
- Stage II (intermediate): altered consciousness without coma or delirium plus minor focal neurological signs.
- Stage III (advanced): stupor or coma, severe neurological deficits, seizures and abnormal movement.



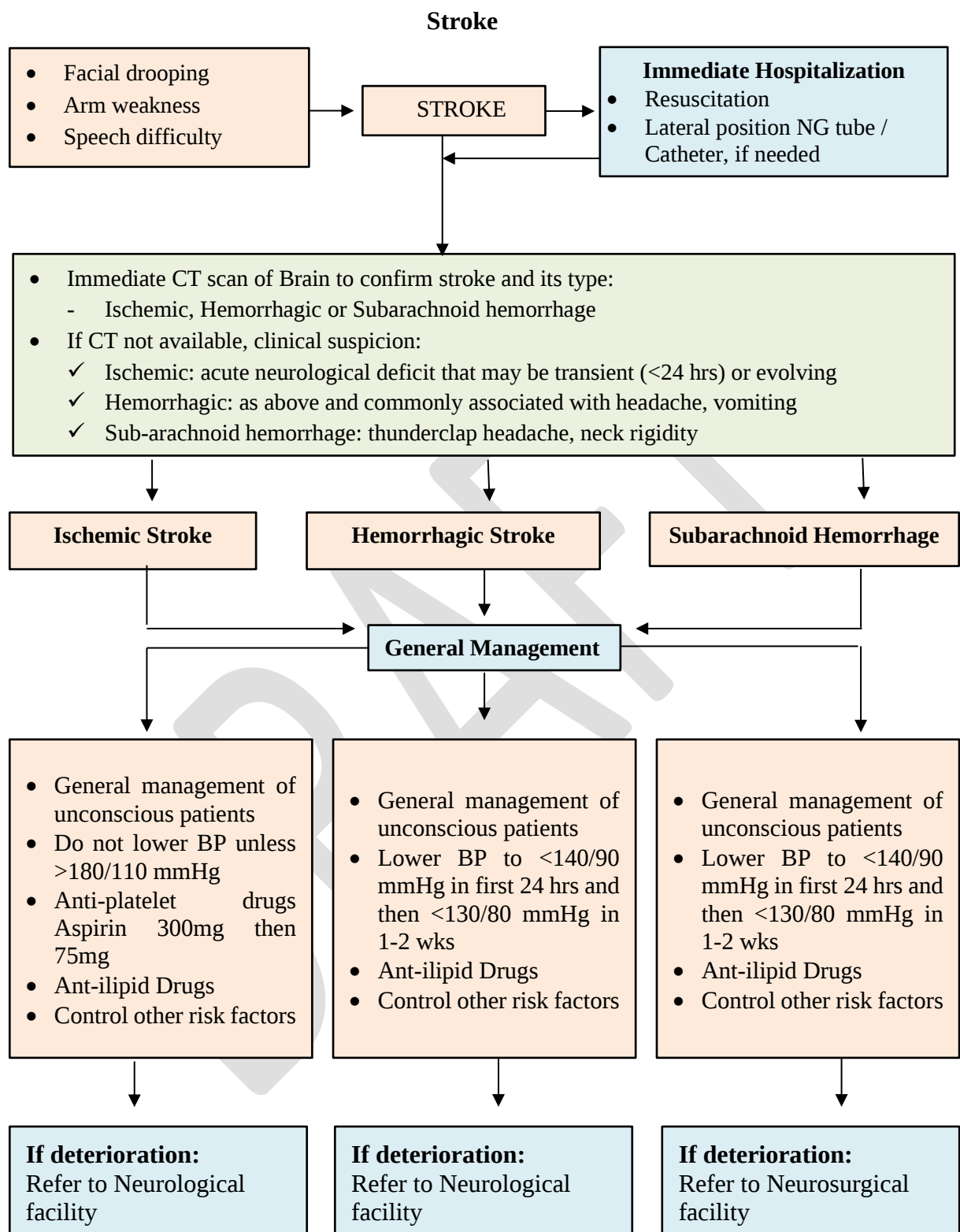
Investigations:

- CBC
- RBS
- S. Creatinine
- S. Electrolytes
- ALT
- TSH
- Chest X-ray P/A view
- CSF study
- CT/MRI of brain



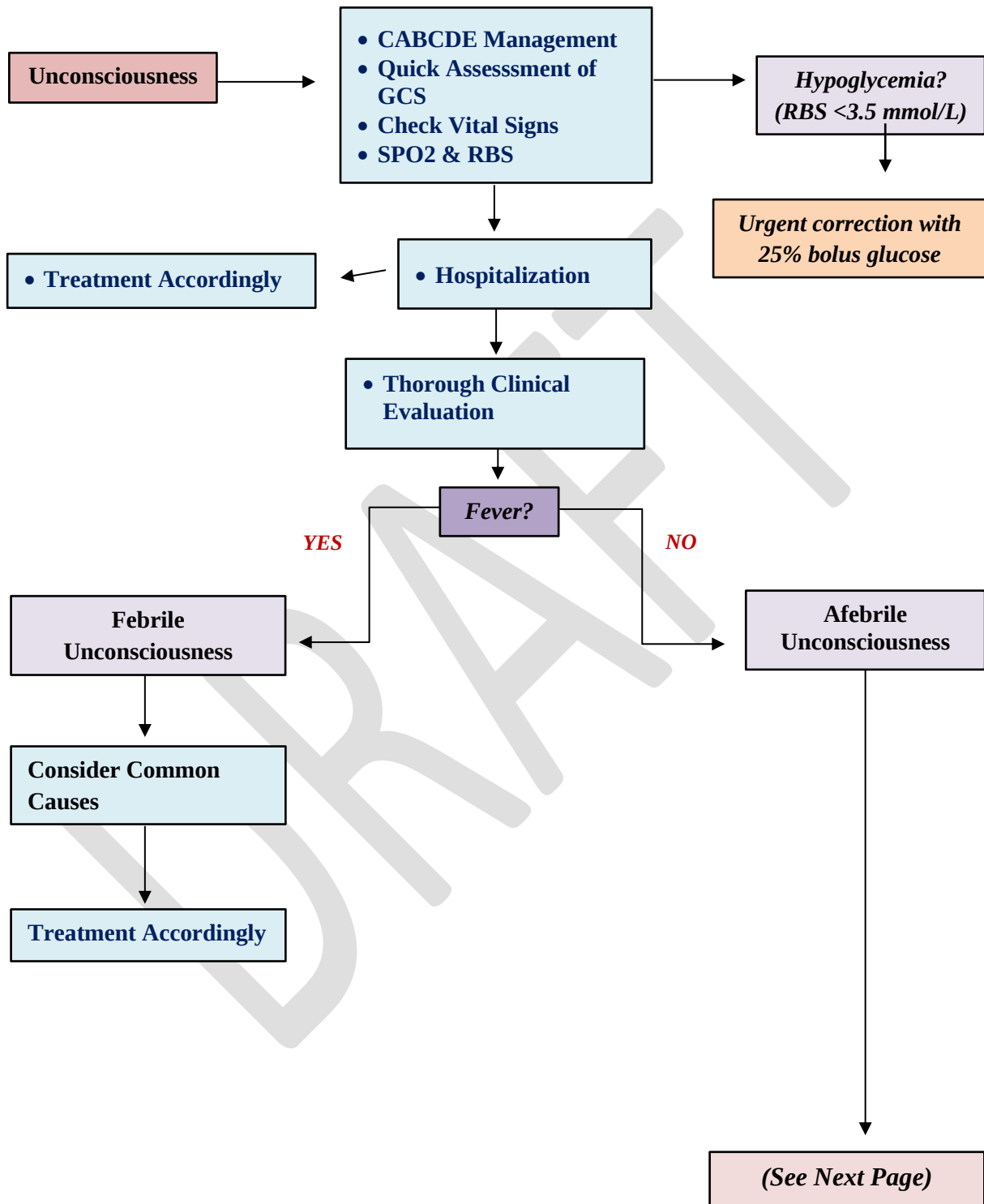
Management:

- As soon as the diagnosis is made or strongly suspected, Anti-TB regimen should be started as per National TB guideline that include pyrazinamide.
- The use of glucocorticoids in addition to antituberculous therapy has been controversial. Recent evidence suggests that it improves mortality, especially if given early, but not focal neurological damage.
- Surgical ventricular drainage may be needed if obstructive hydrocephalus develops.
- Skilled nursing is essential during the acute phase of the illness.
- Adequate hydration and nutrition must be maintained.

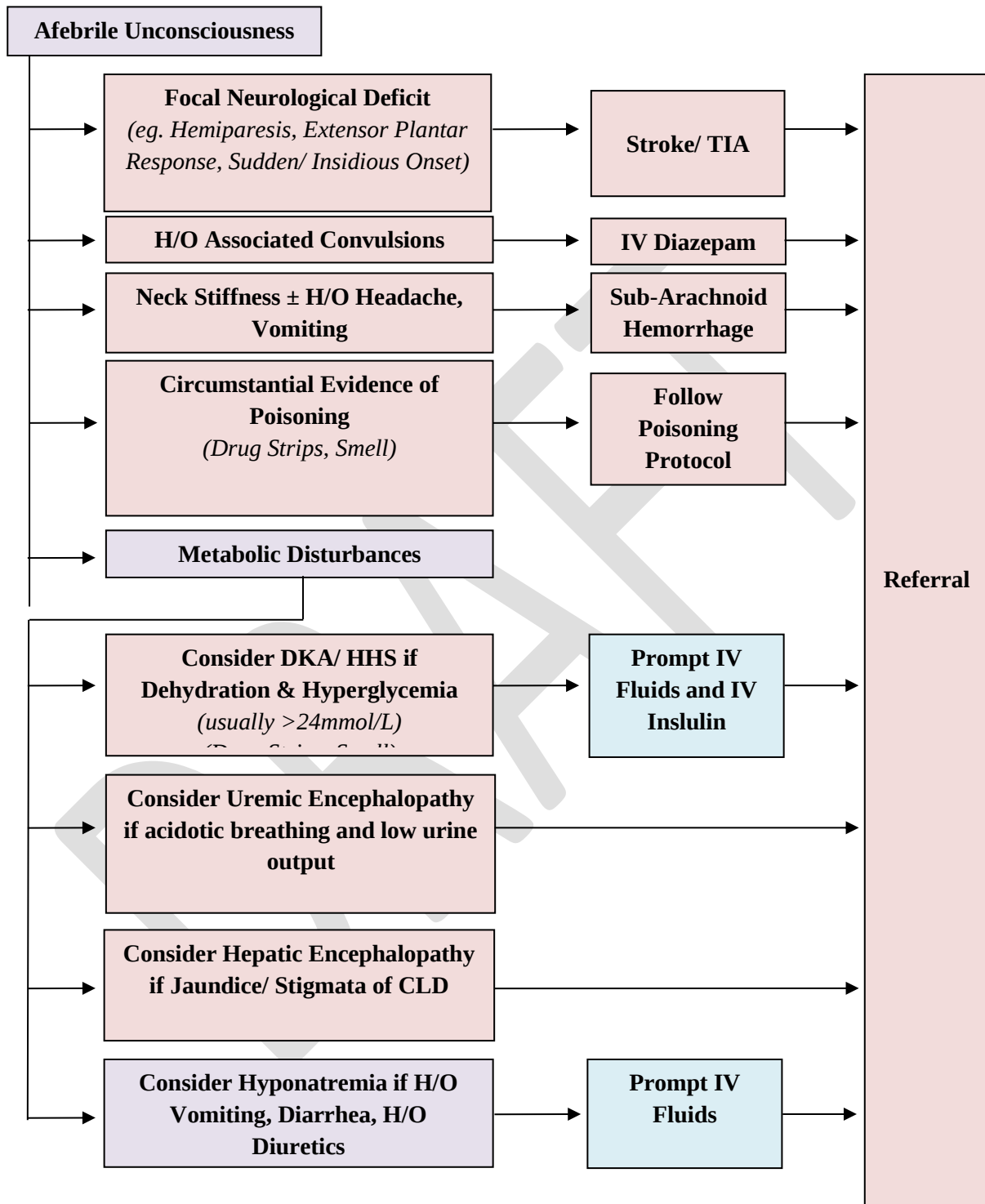


Unconsciousness

Management of Unconsciousness:



Management of Unconsciousness (contd.):



Diabetes Mellitus (DM)

IDDM (Now Called Type-1 DM):

- Requires Insulin replacement therapy

NIDDM (Now called Type-2 DM):

- Varying degrees of Insulin Resistance not requiring replacement
- >20% develop insulin deficiency requiring replacement therapy through disease course

Table. DM Features by Type:

Features	Type-1	Type-2
Typical Age of onset	<40 yrs	>50yrs
Duration of Symptoms	Weeks	Months to Years
Body Weight	Normal or Low	Obese
Ketonuria	Yes	No
Auto antibodies (GAD/IA-2)	Positive 80-90%	Negative
Rapid death without insulin	Yes	No
Presence of complication at diagnosis	No	25%
Family history of diabetes	Uncommon	Common
Other Auto immune disease	Common	Uncommon

Diagnosis of DM:

Typical symptoms-Polydipsia, Polyuria, Nocturia, Rapid Weight Loss despite Polyphagia

Blood Glucose Parameters	Mmol/L	Mg/DL
Fasting Blood Sugar	≥ 7	≥ 126
RBS/ 2 Hours Post Prandial Blood Sugar	≥ 11.1	≥ 200
Glycated Hemoglobin Parameters	mol/mol	
Hb A1c	≥ 48	

In asymptomatic patients 2 diagnostic tests required to confirm DM
2nd test should be same as 1st one.

‘Pre-Diabetes’:

- Impaired fasting glucose (IFG):
 - FBS: 6.1-7.0 mmol/L (110-126 mg/dL)
- Impaired glucose tolerance (IGT):
 - FBS: <7.0 mmol/L (126 mg/dL)
 - 2hrs after 75g oral glucose load: 7.8-11.1 mmol/L (140-200 mg/dl)
- HbA1c Criteria (NICE Guidelines, UK):
 - HbA1c: 6-6.4% (42-47 mmol/mol)

Management:

Dietary management of DM:

Aims to dietary management

- Achieve good glycemic control
- Reduce hyper glycemic and hypo glycemic.
- Assist weight management (*weight maintain in type-I DM)
- Reduce the rise of micro-macro vascular disease
- Ensure and get nutritional intake
- Avoid atherogenic diet or there that aggravate complications high protein intake in nephropathy.

Dietary Constituents and recomdended % energy:

- Carbohydrate-50%
- Sucrose -10%
- Fat (total) <35%
 - n-6 polyunsaturated <10%
 - n-3 polyunsaturated -1 portion 140gm
 - Mono-unsaturated -10-20%
 - Saturated -<10%
- Protein-10-15% (not more than 1g/kg/day)
- Fruits/Vegetable-5 portions daily

Lifestyle Advice:

- Physical Activity:
 - Either 150 mins/ week of moderate-intensity exercise or 75 mins/ week of vigorous-intensity exercise (or a combination)
 - Reduce Sedentary Time
 - Muscle strengthening (resistance) exercise ≥ 2 days/ week

Pharmacotherapy for Type 1 Diabetes: [source: 1. Diabetes Care 2021. ADA. 2. Insulin Guideline, Bangladesh Endocrine Society]

- Most people with type 1 diabetes should be treated with multiple daily injections of prandial and basal insulin, or continuous subcutaneous insulin infusion. Rapid-acting insulin analogs are preferred to reduce hypoglycemia risk.

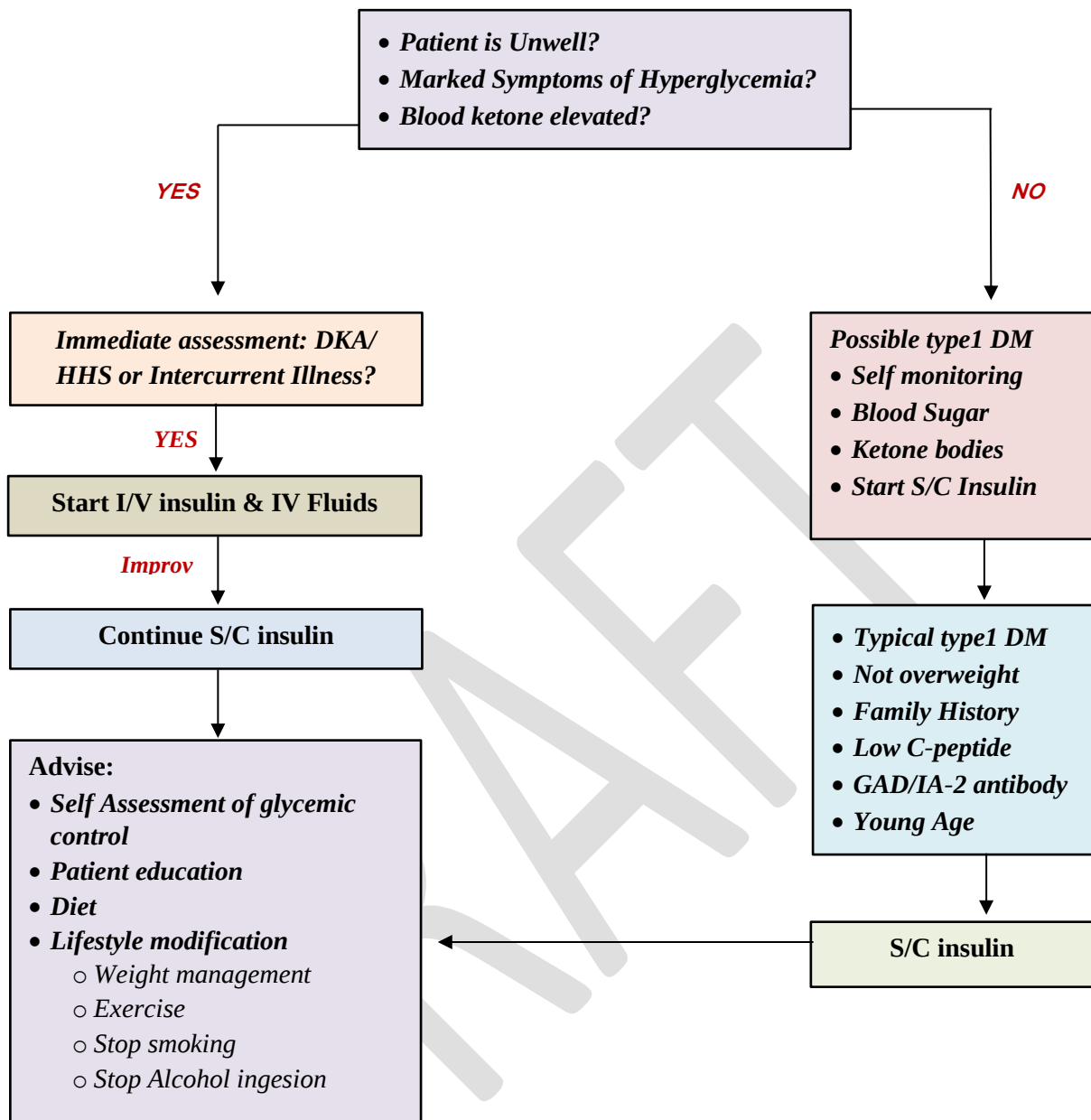
Table: Insulin types [Insulin Guideline, Bangladesh Endocrine Society]

Insulin Type	Onset of Action	Peak	Duration of Action	Appearance
Bolus (prandial) insulins				
Rapid-acting insulin analogues				
• Insulin Aspart	10-15 min	1-1.5 hour	3-5 hours	Clear
• Insulin Glulisine	10-15 min	1-1.5 hour	3-5 hours	Clear
• Insulin Lispro	10-15 min	1-2 hours	3.5-4.75 hours	Clear
Short-acting (Regular) insulins	30 min	2-3 hours	6.5 hours	Clear
Basal insulins				
Intermediate -acting (NPH)	1-3 hours	5-8 hours	Upto 18 hours	Cloudy
Long-acting insulin analogues				
• Insulin Detemir	90 min	N/A	24 hours	Clear
• Insulin Glargine	90 min	N/A	24 hours	Clear
• Insulin Degludec			42 hours	Clear

Table: Insulin Regimen [Insulin Guideline, Bangladesh Endocrine Society]

Regimen	Description
Once daily	NPH or Basal analogue
Twice daily	
• Premixed • Co-formulation • Split-mixed	Less mealtime flexibility
Multiple daily injections	Offers more mealtime flexibility
• Basal plus	One long acting analogue at bedtime, plus one injection of rapid acting analogue with the largest meal
• Basal bolus	One long acting analogue at bedtime, plus two or three injections of rapid acting analogue with meal
Continuous subcutaneous insulin infusion	Insulin pump

- Initiation can be done by basal insulin with the dose of 10 units or 0.1-0.2 U/kgbw. While with split-mixed or pre-mixed regimen, insulin may be initiated at dose of 0.2-0.3 U/kgbw. Basal bolus regimen (MDI) is preferred than pre-mixed regimen in T1DM. Intensification should be done with increase of 10-20% of dose or 2-4 units of insulin as per SMBG records once or twice weekly until glycemic targets are achieved.



Pharmacotherapy for Type-2 Diabetes:

- ☐ Metformin is the first line drug. Once initiated, metformin should be continued as long as it is tolerated and not contraindicated; other agents, including insulin, should be added to metformin.
- ☐ A sodium–glucose cotransporter 2 inhibitor is the preferred initial drug for patients with established atherosclerotic cardiovascular disease or indicators of high risk, established kidney disease, or heart failure.
- ☐ Early combination therapy can be considered in some patients at treatment initiation to extend the time to treatment failure.
- ☐ Indications to start insulin early:
 - Evidence of ongoing catabolism (weight loss),
 - If symptoms of hyperglycemia are present, or
 - When A1C levels ($>10\%$ [86 mmol/mol]) or blood glucose levels ($\geq 300\text{ mg/dL}$ [16.7 mmol/L]) are very high.
- ☐ Choice of pharmacologic agents should be patient-centered. Considerations include effect on cardiovascular and renal comorbidities, efficacy, hypoglycemia risk, impact on weight, cost, risk for side effects, and patient preferences
- ☐ In patients with type 2 diabetes, a glucagon-like peptide 1 receptor agonist is preferred to insulin when possible.
- ☐ Treatment intensification for patients not meeting treatment goals should not be delayed.
- ☐ The medication regimen and medication-taking behavior should be reevaluated at regular intervals (every 3–6 months) and adjusted as needed.

Treatment Targets:

- Blood glucose targets vary according to individual circumstances
- In general:
 - FBS: $5\text{--}7\text{ mmol/L}$ ($90\text{--}126\text{ mg/dL}$)
 - 2-hour post prandial blood sugar: 8 mmol/L ($72\text{--}144\text{ mg/d}$)

Hypoglycemic Shock

Definition: Shock produced by a reduction in plasma glucose concentration to a level that induces symptom and signs such as allied mental status and/or symptomatic nervous system stimulation.

Symptoms:

Neurologic Symptoms:

Sweating
Shakiness
Tachycardia
Anxiety &
A sensation of hunger

Neuro-glycogenic Symptoms:

Weakness
Tiredness
Dizziness
Confusion
Difficulty in concentration
Blurred vision
In extreme case-coma and death.

Signs:

On G/E: Hypothermia
Tachypnoea
Tachycardia
HTN &
Bradycardia

On S/E: Blurred vision
Pupils fixed and dilated
Coma
Confusion
Fatigue
Loss of co-ordination
Combative or agitative
Shake, tremor, convulsion, diplopia
Nausea, vomiting
Skin diaphoresis and warm, show sign of dehydration.

Investigation:

- Blood glucose level
- Blood insulin level
- C-peptide level
- LFT e.g in- CLD
- Renal function test: R.F
- Blood culture, Urine culture
- MP, ICT for malaria
- CT scan of abdomen - If Insulinoma/Sarcoma

Treatment:

If patient is semi-consciousness or unconscious, parenteral treatment is required.

IV 75-100 ml 25% dextrose over 15 minutes

Or

I/v 150-200ml 10% dextrose over 15 minutes

Or

I/M glucagon 1 mg is given

If patient is conscious and able to swallow give oral refined glucose or drink or sweets (~25gm) or apply glucose gel or jam or honey to buccal mucosa.

Follow up: F/U visit after 2 weeks with the following-

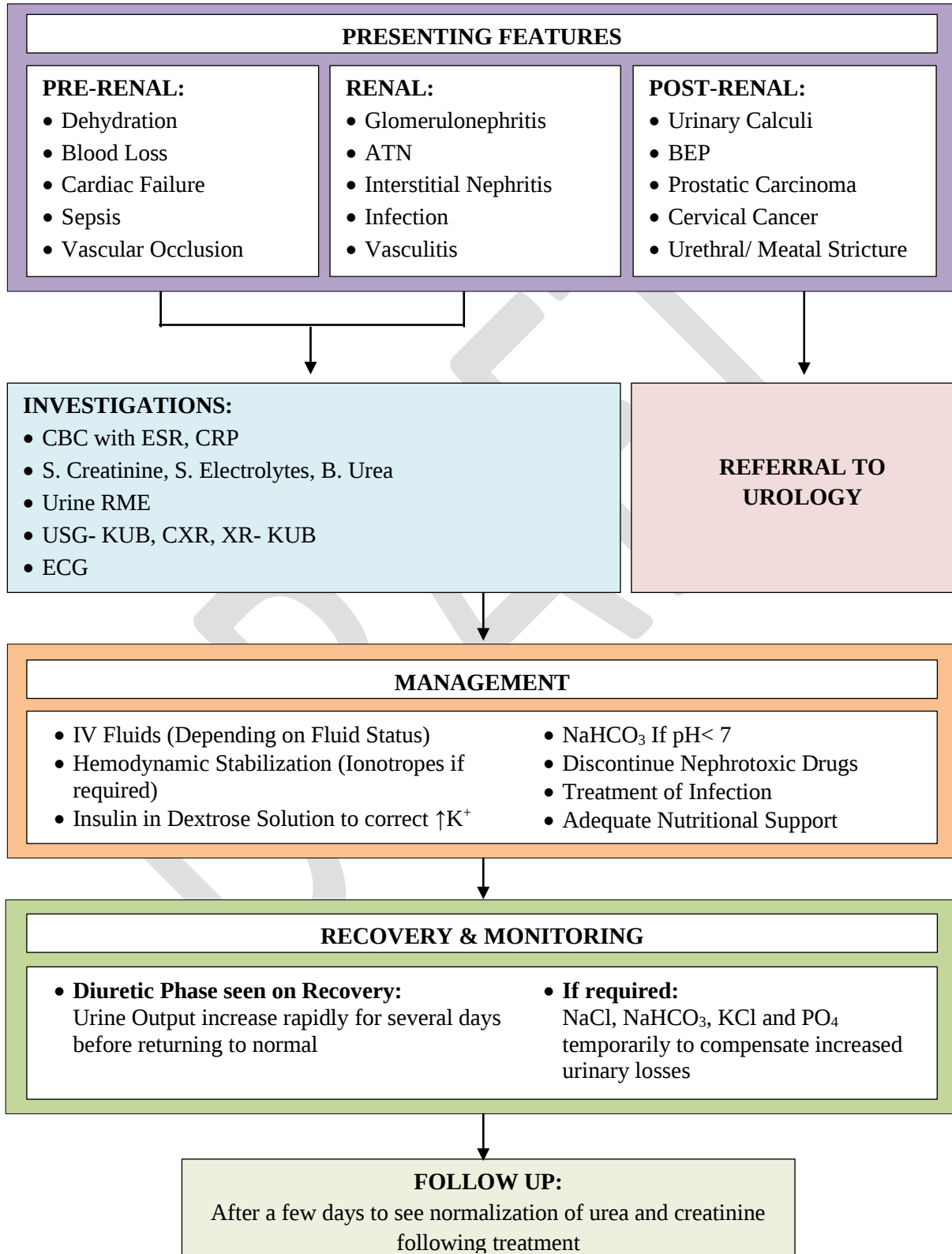
- Fasting blood sugar

- Blood sugar 2 hr after meal

- HbA1c

Acute Kidney Injury (AKI)

A medical situation where there is sudden and often reversible loss of renal function which develops over days or weeks and is often accompanied by reduction in urinary volume.

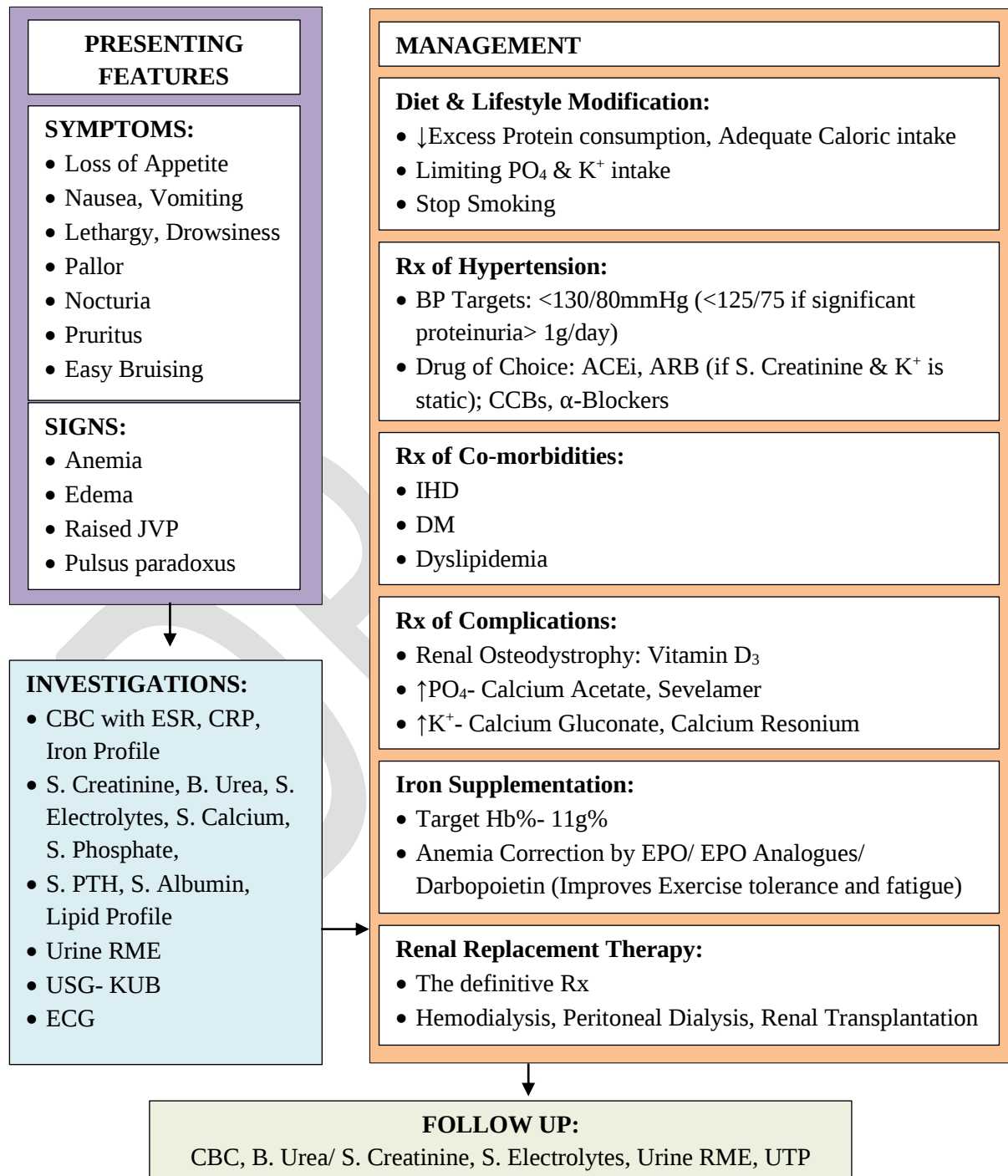


Chronic Kidney Disease (CKD)

CKD refers to an irreversible deterioration in renal function that develops over a period of years. Initially it manifests only as a biochemical abnormality but eventually leads to uraemia as the disease progresses.

Common Causes:

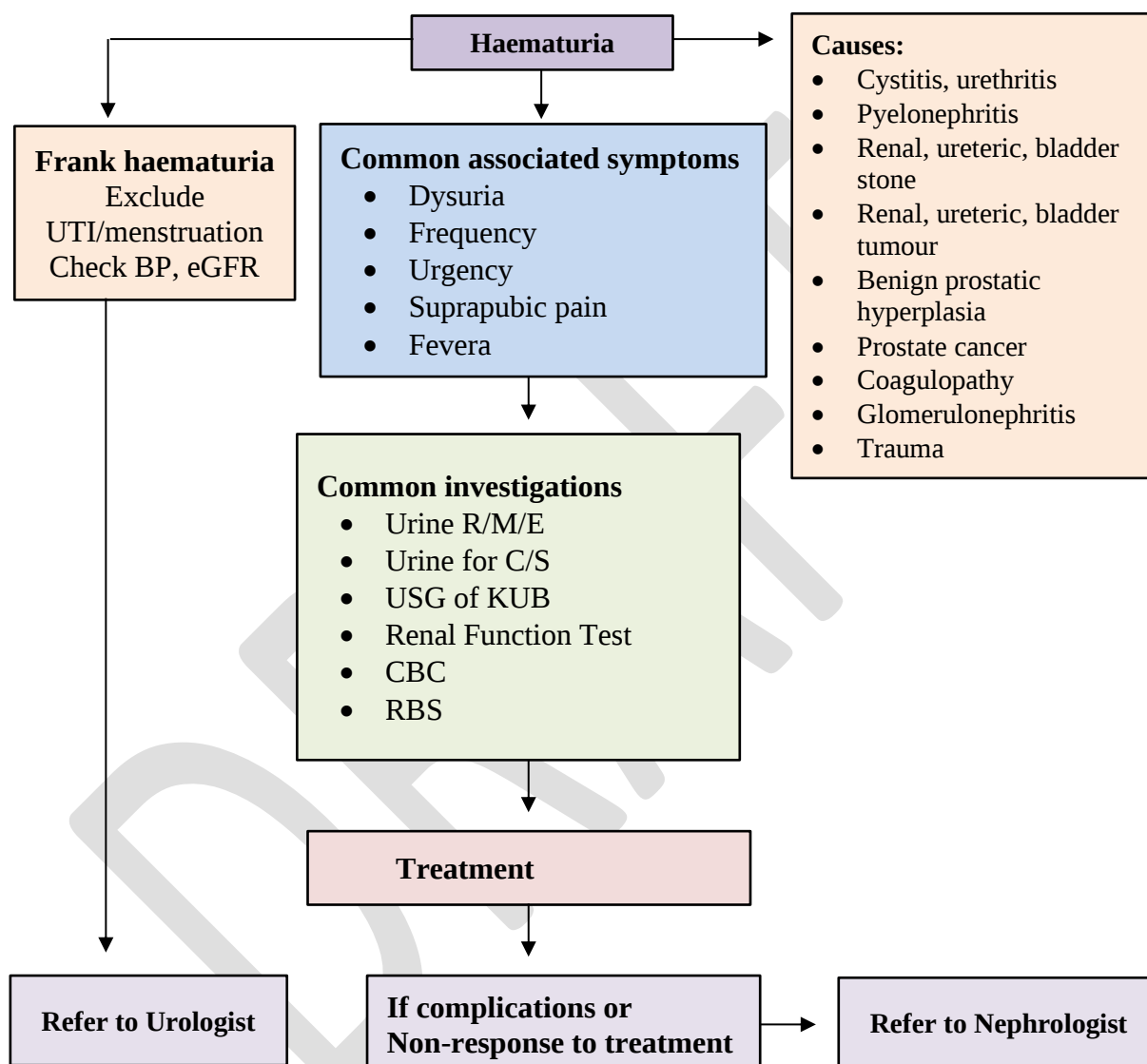
- Systemic Disease: DM, Hypertension
- Renal Disease: Glomerular Disease, Interstitial Nephritis, PKD, Renovascular Disease
- SLE, Vasculitis



Hematuria (Persistent & Recurrent)

Hematuria is the presence of blood in the urine which can be seen in urine or presence of RBC in urine on microscopy. It is a common symptom of both benign and malignant conditions.

It may be persistent or recurrent.



Nephrotic Syndrome (NS)

- Generalized Edema
- Massive Proteinuria ($>3.5\text{g/day}$)
- Bedside Urine +++
- Hypoalbuminemia ($<3\text{g/dL}$)
- Hyperlipidemia ($\uparrow$ Blood Total Cholesterol & Triglycerides)
- Lipiduria (Lipid Casts in Urine)
- BP usually normal

Nephrotic Syndrome

Common Investigations:

- CXR P/A View
- USG of W/A
- S. Creatinine, S. Urea
- S. Electrolytes
- HBsAg, Anti HCV
- CBC with ESR, PBF
- 24hrs UTP, ANA, C3, C4

Treatment

Age < 18 yrs:

- Steroids
- Other General Measures

Age > 18 yrs:

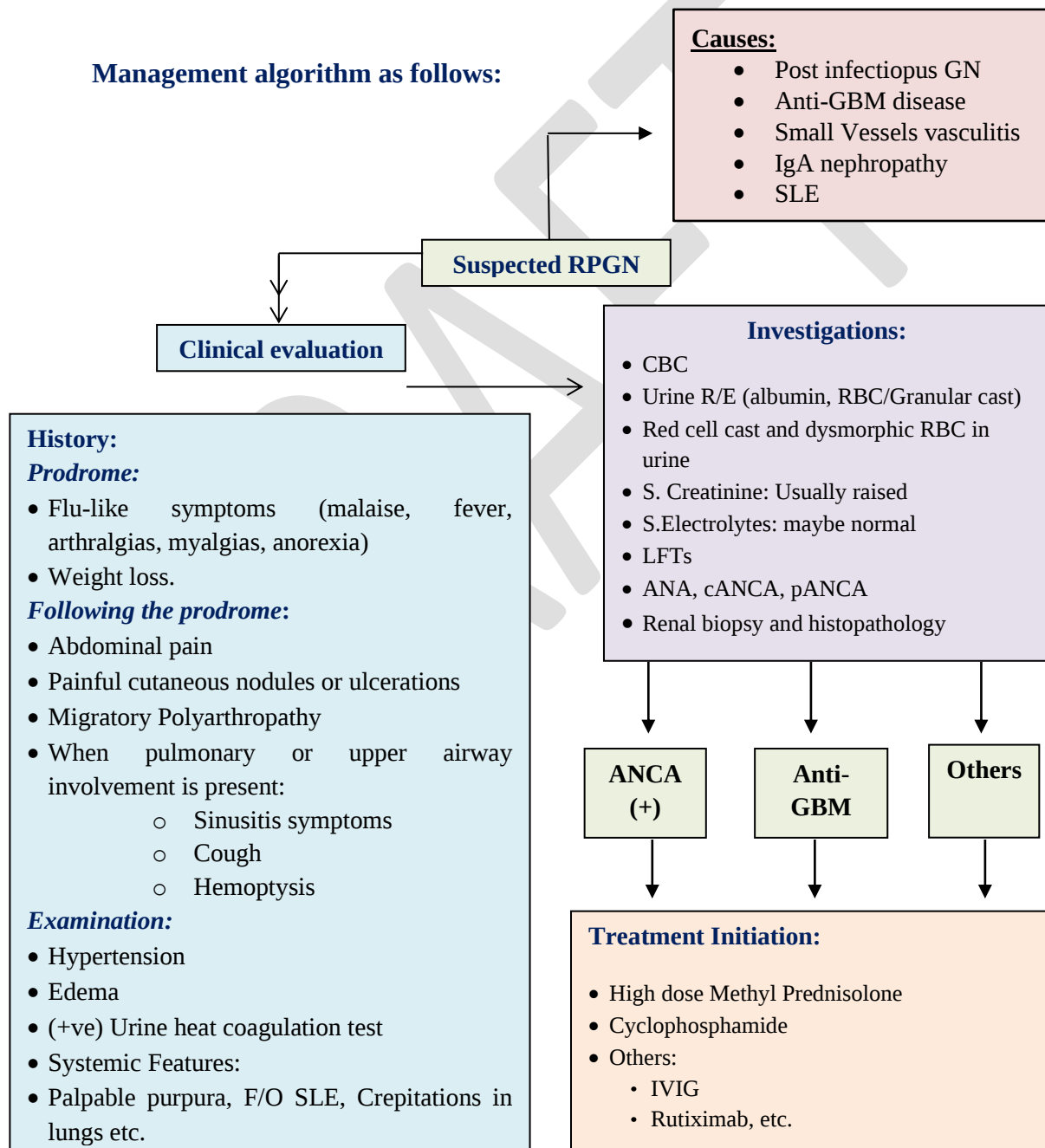
- Referral for Renal Biopsy
- Treatment based on history / specific underlying causes

Rapidly Progressive Glomerulonephritis (RPGN)

Rapidly progressive glomerulonephritis (RPGN) is a disease of the kidney characterized clinically by:

- **Rapid decrease in GFR** of at least 50% over a period of a few days to 3 months, usually in association with hypertension and oesema.
- Pathologic finding: **Extensive glomerular crescent formation.**

Management algorithm as follows:



Treatment:

- **Steroids:**

- ✓ **IV Methylprednisolone:** 7 mg/kg/day (not to exceed 1g) for 3 days
- ✓ **Then Oral Prednisone:** 1 mg/kg/day (not to exceed 80 mg) for 3 weeks
- ✓ **Then Oral Prednisone:** 2 mg/kg every other day (not to exceed 120 mg) for 3 months
- ✓ Then the dose is **tapered** by 25% every 4 weeks and discontinued

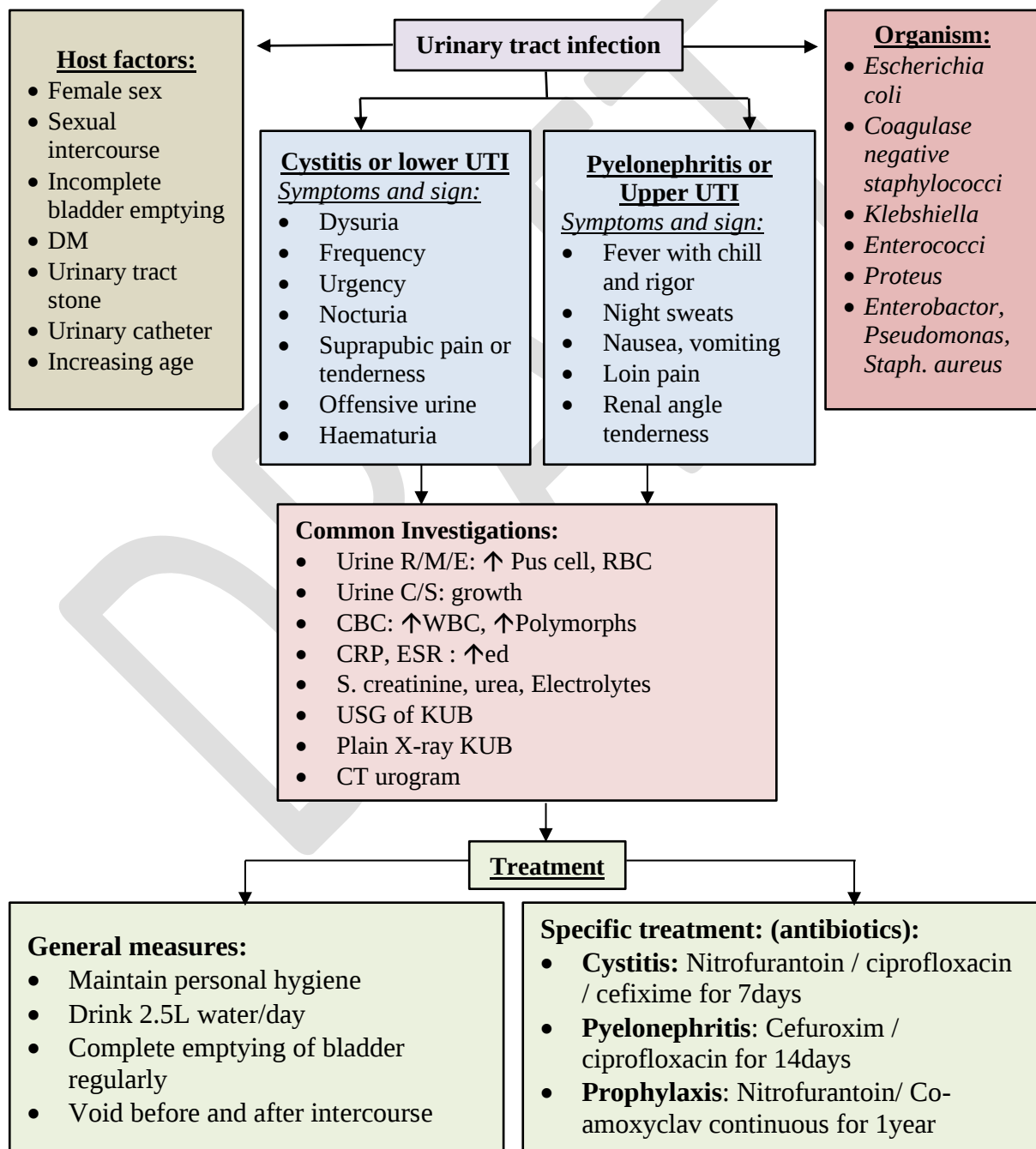
- **IV/ Oral Cyclophosphamide**

- ✓ **IV dose:** 0.5 g/m² bsa (*maximum 1 g/m² body surface area*)
- ✓ **Oral dose:** 2 mg/kg.

Both doses adjusted according to a 2weeks leukocyte nadir count (goal 3000-4000/ μ L).

Urinary Tract Infection (UTI)

- Uncomplicated UTI is a symptomatic bladder infection with a normal urinary tract
- Complicated UTI is a symptomatic infection in any part of the urinary tract with a functional and structural urinary abnormality
- Asymptomatic bacteriuria is the isolation of a significant bacterial count in an asymptomatic patient
- Re-infection is a recurrent UTI with the same or different organism following clearance of the original UTI



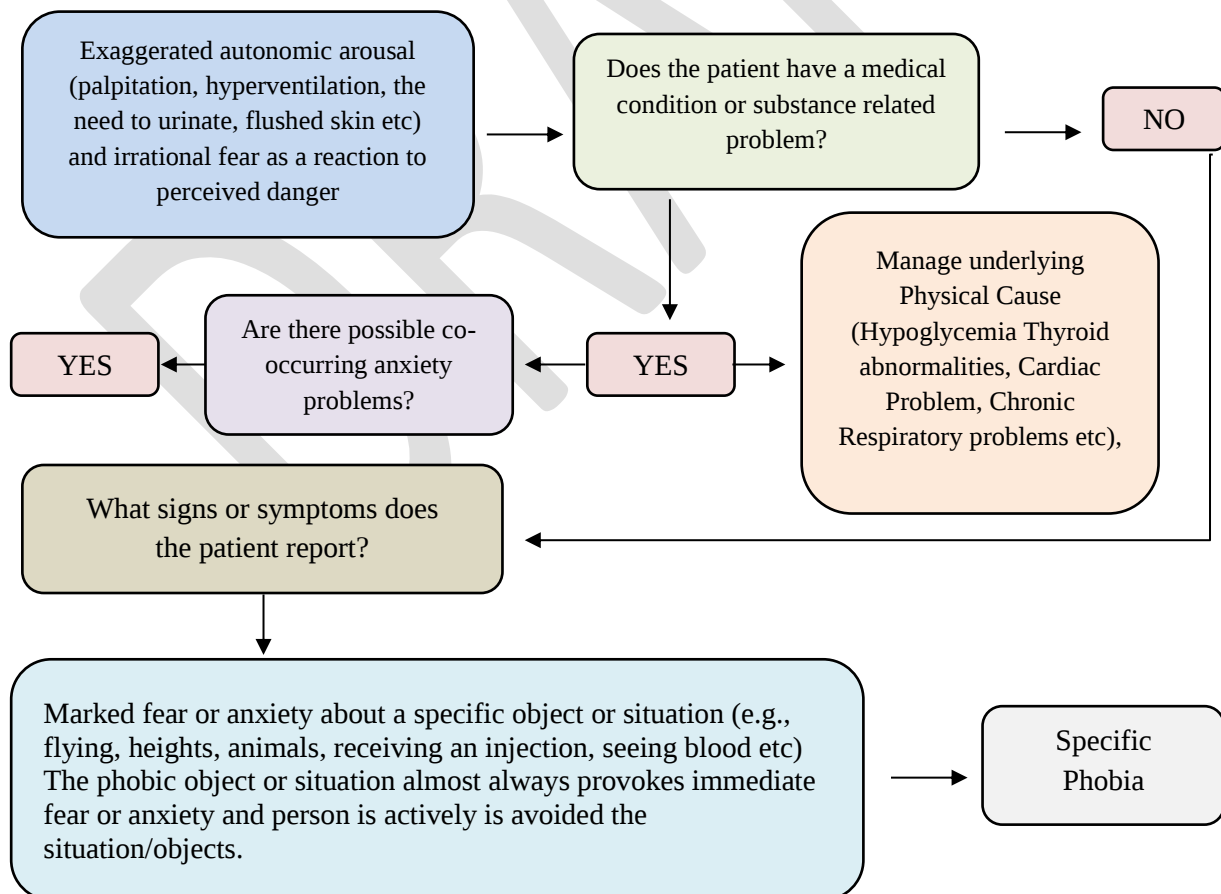
Anxiety Disorders

- Anxiety Disorders include disorders that share features of excessive fear and anxiety and related behavioral disturbances.
- Fear is the emotional response to real or perceived imminent threat, whereas anxiety is anticipation of future threat.
- Anxiety disorders occur when this normal physiological response is associated with high levels of autonomic arousal, erroneous cognitions and dysfunctional coping strategies.

Common Types:

- Phobia (Specific Phobia, Social Phobia, Agoraphobia)
- Panic Disorder
- Generalized Anxiety Disorder
- Obsessive Compulsive Disorder

Diagnostic Criteria and Management of common anxiety disorders



Recurrent panic attacks, catastrophizing about anxiety and panic symptoms.

Panic attack: An abrupt surge of intense fear or intense discomfort that reaches a peak within minutes with at least 4 following symptoms present: Palpitation, Sweating, Shaking, Shortness of breath, Sensation of choking, Chest pain, Nausea, Dizziness, Fear of dying, numbness etc)

Panic Disorder

Excessive anxiety and worry are associated with three (or more) of the following symptoms Restlessness, Being easily fatigued, Difficulty concentrating or mind going blank, Irritability, Muscle tension, difficulty falling or staying asleep, or restless. The individual finds it difficult to control the worry. The symptoms cause clinically significant distress or impairment in social, occupational, or other important areas of functioning

Generalized Anxiety Disorder

Unwanted intrusive recurrent thoughts, images or urges leading to distress or discomfort and/or excessive, ritualized compulsive response, or other important areas of functioning.

Symptoms: Fear of contamination or dirt, Doubting and having difficulty tolerating uncertainty, Needing things orderly and symmetrical, Aggressive or horrific thoughts about losing control and harming yourself or others, Unwanted thoughts, including aggression, or sexual or religious subjects.

Obsessive Compulsive Disorder

Assessment: History taking, Symptoms and Clinical Examination

Investigations: Only relevant investigations to exclude any physical comorbidities (ECG, CXR, Blood Sugar, TFT etc)

Management:

- Non-Pharmacological: Assurance, Self-help and Psychoeducation, Psychotherapy
- Pharmacological:
 - Anxiolytic (Benzodiazepines) for short duration. Alprazolam (0.25 mg-1 mg/day), Clonazepam (0.5 mg-2 mg/day)
 - SSRI: Escitalopram (5-20 mg/day) morning dose in case of Panic Disorder, Specific Phobia, Generalized Anxiety Disorder. Fluoxetine (20-40 mg); Fluvoxamine (50- 150 mg/day); Clomipramine (25-150 mg/day) for Obsessive Compulsive Disorder
 - Beta adrenergic antagonists: to control anxiety associated with sympathetic stimulation; Propranolol (30-60 mg/day)
 - TCA: Amitriptyline (10-75 mg/day); Nortriptyline (10-75mg/day)

Conversion (Dissociative) Disorder

It is a common mental disorder in which a wide variety of somatic (physical) and mental symptoms develop for some real or imagined gain without being fully aware of the underlying motive.

Three characteristics of the symptoms:

1. They occur in the absence of physical pathology
2. They are produced unconsciously-NOT INTENTIONALLY
3. They are not caused by over activity of the sympathetic nervous system

Clinical syndromes of conversion disorder

A. Conversion symptoms (Physical symptoms)

- a. Motor symptoms - These may consist of paralysis, paresis, fits, tremors, rigidity, abnormal gait, ataxia, vomiting, fits.
- b. Sensory symptom - Anesthesia, paraesthesia, Irrational unexplained pains, complaining loss of vision or hearing or aphonia/ dysphonia or loss of smell or loss of taste.

B. Dissociative symptoms (Mental symptoms)

- a. Amnesia - Forgetting a specific or traumatic episode in a clear consciousness and complains that she or he knows nothing of his earlier life.
- b. Fugue state - It is a state of wandering away from the environment and usually to escape from a disagreeable or threatening situation. Emotional conflict or stress is expressed by dissociation of the mind

Difference between epileptic fit and fit from conversion disorder

	Epilepsy/True Seizure	Conversion disorder/Pseudoseizure
Consciousness	Real loss	No real loss, can remember things what happened during fit
Fits alone / during sleep	Yes	No
Every fit same as the other	Same in each situation	Different in each situation
Movement of the limbs	Yes, in typical fashion	Yes, but variable
Tongue bite	Present	Absent
Incontinence of urine and faeces	Present	Absent
History of fall and injury	Present & genuine	May be present due to constant friction over the ground

Assessment: History taking, Symptoms and Clinical Examination

Investigations: – Avoid unnecessary investigations unless there is a clear indication

Non-Pharmacological: Assurance, Self-help and Psychoeducation, Psychotherapy, Not reinforced the symptoms by giving excessive attention to the symptoms.

Address current psychosocial stressors, strengthen support, Teach stress management such as relaxation techniques.

Pharmacological:

- Anxiolytic (Benzodiazepines) for short duration. Alprazolam (0.25 mg-1 mg/day), Clonazepam (0.5 mg-2 mg/day)
- SSRI: Escitalopram (5-20 mg/day) morning dose , Fluoxetine (20-40 mg)

TCA: Amitriptyline (10-75 mg/day); Nortriptyline (10-75mg/day)

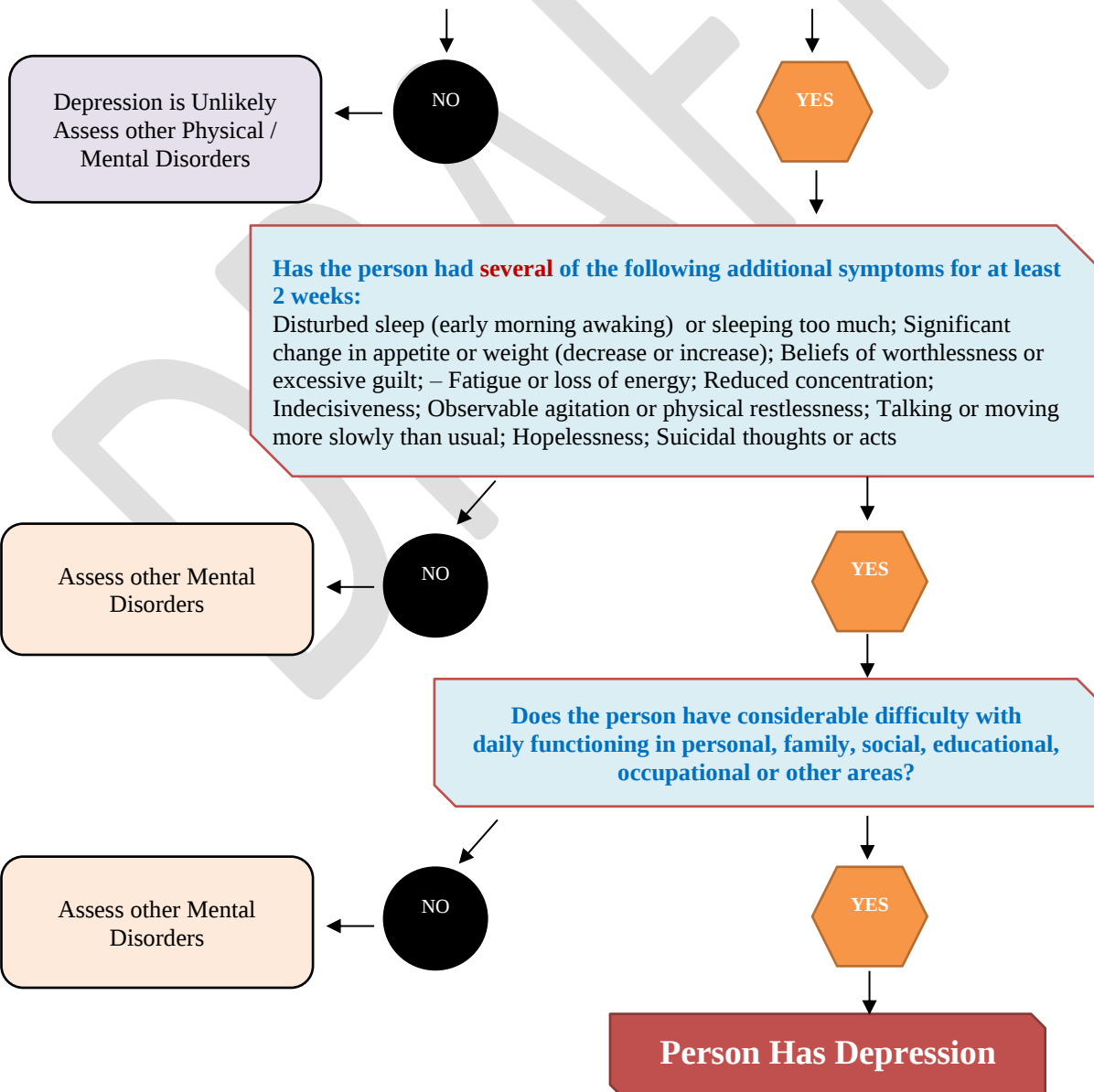
Depression

COMMON PRESENTATIONS OF DEPRESSION

Multiple persistent physical symptoms with no clear cause
Low energy, fatigue, sleep problems
Persistent sadness or depressed mood, anxiety
Loss of interest or pleasure in activities that are normally pleasurable

Has the person had **at least one** of the following core symptoms of depression for at least 2 weeks?

- Persistent depressed mood
- Markedly diminished interest in or pleasure from activities



Management of Depression:

Assessment: Thorough history taking with mental state examination and exclude any history of Mania to exclude bipolar disorder. **If any current /previous history of mania avoid any sort of Antidepressant and follow protocol P1 (see Psychoses chapter) and refer the patient to Psychiatrist.**

Mania: Have several of the following symptoms occurred simultaneously, lasting for at least 1 week:

Elevation of mood and/or irritability; Decreased need for sleep; Increased activity; feeling of increased energy; increased talkativeness or rapid speech; Impulsive or reckless behaviours such as excessive spending; making important decisions without planning and sexual indiscretion; Loss of normal social inhibitions resulting in inappropriate behaviors; Being easily distracted; Unrealistically inflated self-esteem

If no features of Mania, provide treatment for depression

Treatment for Depression:

Non-pharmacological:

- Psychoeducation to the person and their carers about treatment options and medications
- Reduce stress and strengthen social supports.
- Promote functioning in daily activities and community life.
- If available, consider referral for one of the following brief psychological treatments:
 - interpersonal therapy (IPT), cognitive behavioral therapy (CBT), behavior activation and problem-solving counselling.

Pharmacological:

- **Antidepressant:** adequate dose and duration
- **DO NOT** manage the symptoms with ineffective treatments, e.g. vitamin tablets / injections
- Offer regular follow-up.

Antidepressants

TCA: Amitriptyline: Start 25 mg at bedtime. Increase by 25-50 mg per week to 100-150 mg daily (maximum 300 mg). Minimum effective dose in adults is 75 mg.

SSRI: Fluoxetine: Start 20 mg daily. If no response in 6 weeks, increase to 40 mg; (maximum 80 mg).

Sertraline: Start 25 mg at morning/daytime. Increase by 25-50 mg per week to 100-150 mg

- Antidepressant works slowly, so patients and doctors both need patience
- Need to continue at least 9-12 months after resolution of symptoms

Psychoses

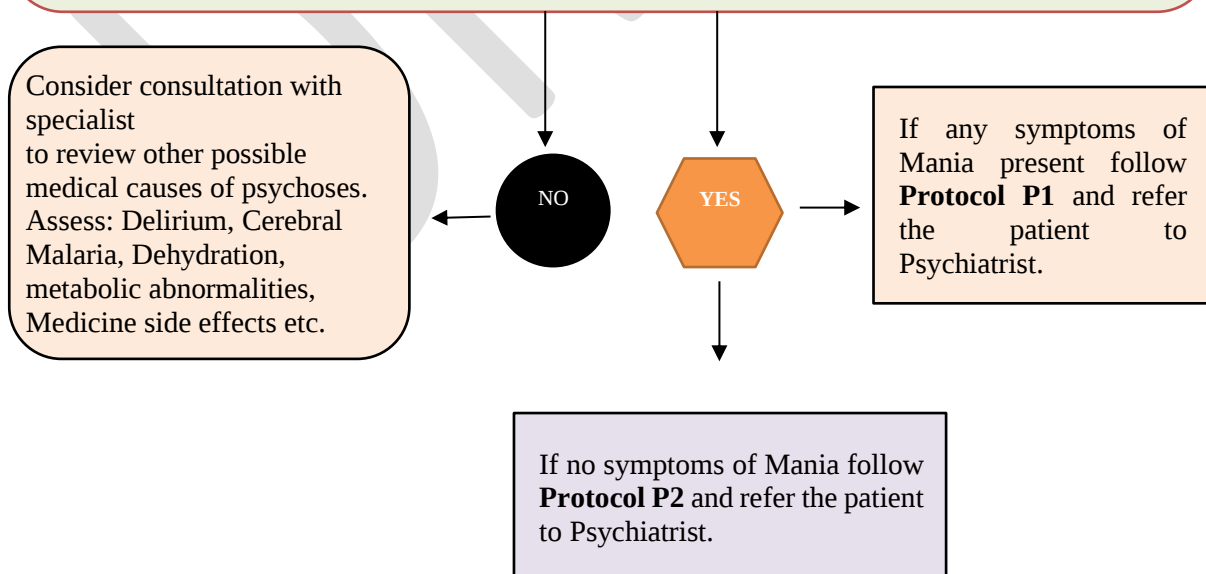
Psychoses are major mental illness, where person lost his/her insight; unaware about his/her illness. These are characterized by distorted thoughts and perceptions, as well as disturbed emotions and behaviors. Incoherent or irrelevant speech may also be present. **Schizophrenia, Bipolar disorder, Delusional disorder** etc are common psychoses.

COMMON PRESENTATIONS OF PSYCHOSES

- Marked behavioral changes, neglecting usual responsibilities related to work, school, domestic or social activities.
- Agitated, aggressive behavior, decreased or increased activity.
- Delusions – fixed, false beliefs not shared by others in the person's culture.
- Hallucinations – hearing voices, or seeing things that are not there
- Loss of Insight-- Lack of realization that one is having mental health problems.
- Features of Mania (*see Depression management*)

Does the person have at least two of the following?

- Delusions, fixed false beliefs not shared by others in the person's culture
- Hallucinations, hearing voices or seeing things that are not there
- Disorganized speech and/or behavior, e.g., incoherent/irrelevant speech such as mumbling or laughing to self, strange appearance, signs of self-neglect or appearing unkempt



Protocol: P1 for Mania (Bipolar Disorder)

- Provide psychoeducation to the person and carers.
- Ensure safety of the person and safety of others
- Promote functioning in daily activities
- Reduce stress and strengthen social supports
- Pharmacological Intervention :
 - If patient is on antidepressants – DISCONTINUE
 - Begin treatment with lithium, valproate, carbamazepine, or with antipsychotics if enough support at treatment facilities. . Consider a short term (2-4 weeks maximum) benzodiazepine for behavioural disturbance or agitation.
- Refer to Psychiatrists or Nearby medical college

Protocol: P2 for Psychosis

- Provide psychoeducation to the person and carers.
- Ensure safety of the person and safety of others
- Promote functioning in daily activities
- Reduce stress and strengthen social supports
- Pharmacological Intervention :
 - Start antipsychotics with a low dose within the therapeutic range and increase slowly to the lowest effective dose, in order to reduce the risk of side-effects.
- Refer to Psychiatrists or Nearby medical college

Antipsychotics (For Psychoses & Mania)

Medication	Dosing	Common side effects	Cautions
Haloperidol	Start 1.5-3 mg daily. Increase as needed (maximum 20 mg daily). Route: oral (p.o.) or intramuscular (i.m.).	Common: sedation, dizziness, blurred vision, dry mouth, urinary retention, constipation	Caution in patients with: kidney disease, liver disease, cardiac disease, long QT syndrome or taking QT-prolonging medications. Monitor ECG if possible.
Risperidone	Start 1 mg daily. Increase to 2-6 mg daily (maximum 10 mg). Route: p.o.	Common: sedation, dizziness, tachycardia.	Caution in patients with: cardiac disease.
Chlorpromazine	Start 25-50 mg daily. Increase to 75-300 mg daily (up to 1000 mg may be necessary for severe cases). Route: p.o	Common: sedation, dizziness, blurred vision, dry mouth, urinary retention, constipation, tachycardia.	Contraindications: impaired consciousness, bone marrow depression, pheochromocytoma.

Mood Stabilizers (For Mania)

Sodium Valproate	Start 500 mg daily. Increase slowly to 1000-2000 mg daily (Maximum 60 mg/kg/day). Route: p.o	Common: sedation, headache, tremor, ataxia, nausea, vomiting, diarrhea, weight gain, transient hair loss. Serious: impaired hepatic function, Drug Rash (Steven Johnson Syndrome)	Caution in patients with: underlying or suspected hepatic disease. Monitor liver function tests and platelets if possible.
Lithium <i>Use only if clinical and laboratory monitoring are available</i>	Start 300 mg daily. Increase gradually every 7 days until target blood level reached (maximum 600-1200 mg daily). Monitor every 2-3 months. Route: p.o	Common: sedation, cognitive problems, tremor, : impaired coordination, hypotension, leukocytosis, polyuria, polydipsia, nausea, diarrhea, weight gain, hair loss, rash. Serious: diabetes insipidus, hypothyroidism,	Contraindicated in patients with: severe cardiac or kidney disease. Dehydration can increase lithium level, which may be toxic.

Autoimmune Bullous Disease

Two common types:

1. Pemphigus Vulgaris
2. Bullous Pemphigoid

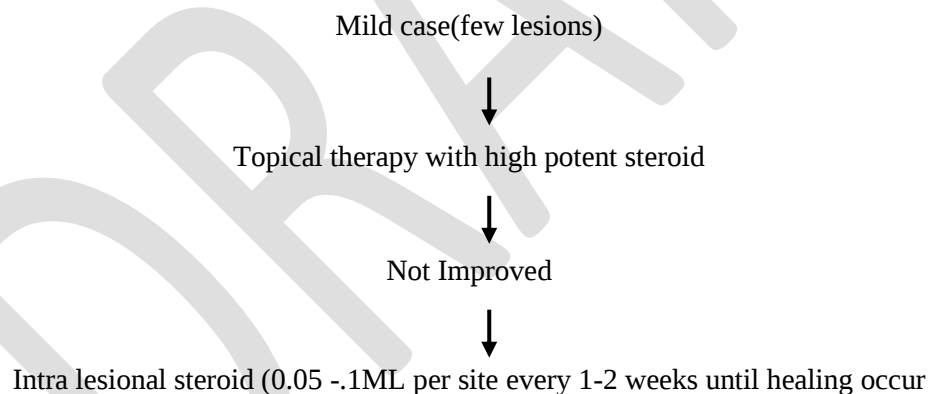
These are group of autoimmune disorders characterized by intra epidermal or sub epidermal blisters.

Clinical feature- Vesicles, bullae, erosion or crusted plaques on skin or oral erosion and ulcers. Blisters rupture easily to leave behind painful areas of oozing and denuded skin that continue to extend, showing little tendency to heal.

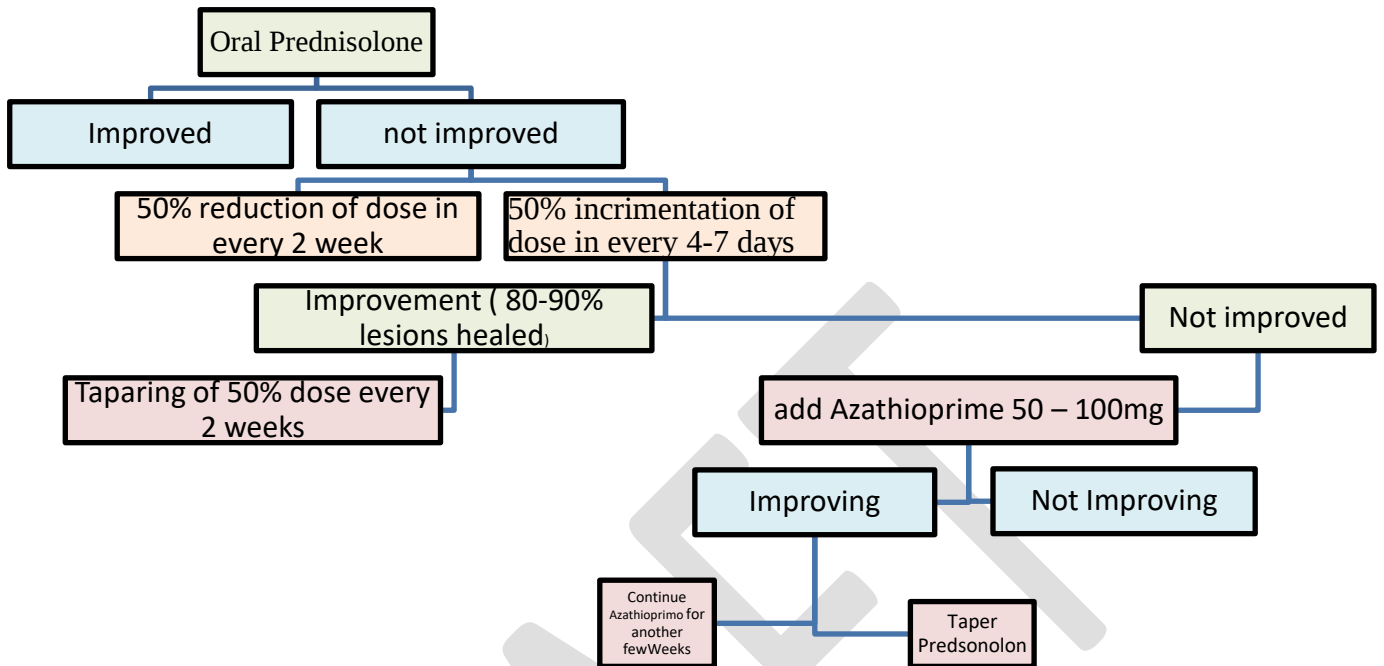
Bedside test- Nikolsky's Sign
Bulla Spread Sign/Lutz Sign

Investigation- CBC, RBS, SGPT, S. Creatinin, CXR P/A View, USG Of Whole Abdomen, Urine RME
Skin Biopsy for Histopathology
Direct Immunofluorescence Test
Indirect Immunofluorescence test

Treatment:



Severe case (Many skin lesions associated with mucosal involvement)



Consider other drugs like cyclosporin, cyclophosphomide, Methotrexate, Dapsone, Biologics, IVIG, Plasmapheresis

Scabies and Tinea Infection

Tinea Infection

Superficial fungal infection affect the keratinized tissue of the skin, nail, hair.

Followings are the traditoional divisionof dermatophytosis

1. Tinea Capitis
2. Tinea Barbae
3. Tinea Corporis
4. Tinea Cruris
5. Tinea Pedis
6. Tinea Manuum
7. Tinea Unguium
8. Tinea Faciei
9. Tinea Incognito

Tinea Capitis

Types:

1. Inflammatory (Kerion and Favus) Inflammatory nodule on scalp with woozing
2. Non inflammatory (Grey patches and black dots)

Treatment: Only oral medication is effective

Drugs: Fluconazole 3-6mg/kg/day – 6 weeks
Terbinafine 3-6mg/kg/day – 4-8 weeks
Itraconazole 5mg /kg/day 4-6 weeks

Tinea corporis

Involvement of the trunk with annular or polycyclic border. It's border is erythematous and vesicular or scaly but centre is clear. Concentric ring may be present. The clinical feature is often modified.

Tinea Cruris

Involvement of the groin also medial aspect of thigh and usually bilateral. The may involve the buttock and may spread to scrotum. Penis is occasionally involved.

Tinea Pedis

Type	features
Chronic Intertrigenous type	Fissuring, scaling or maceration of the interdigital or subdigital areas
Chronic papulosquamous	Inflammation and or patchy or diffuse moccasin like scaling over the soles
Vesicular or vesiculobullous	Vesicles and vesiculopustules near insteps and on midanterior planter surface.
Acute ulcerative type	Maceration, weeping, denudation and ulceration of sizeable areason the soles. Pungent odor is characteristics.

Tinea Manuum

Dermatophytosis of palmer skin.

- Types:** 1. Non inflammation-Squamous form : Hyperkeratosis of the palms and finger. Hyperhidrosis is a common association. Associated with nail involvement.
2. Inflammatory vesicular/ dyshydrotic/eczematous form
- Vesicles in cluster form. Lesions are in annular and in cluster form.

Tinea unguium/ onycholysis

Dermatophytosis of nail plate. Common in women. Nail plate becomes yellow, thickened and brittle.

Treatment

Condition	Medication	Dose and regimen	Comment
Tinea pedis			
Topical	Econate nitrate cream Terbinafine hydrochloride Ciclopirox cream	1% cream o.d to b.i.dx1-4 weeks 2% cream o.d to b.i.dx1-4weeks	Antifungal powder or gel formulations of ciclopirox or naftifine for moist web space
Oral	Itaconazole	0.77% cream o.d to b.i.dx1-4weeks	
	Flucinazole	400mg o.d 1 week or 200mg o.d 2 week	
		150 -300mg x 1 dose/week, repeat for 4-6 weeks	

Condition	Medication	Dose and regimen	Comment
Tinea Corpories			
Topical	Miconazole cream Clotrimazole cream Econazole cream Terbinafine cream hydrochloride	2% cream b.i.d 1% cream b.i.d 1% cream b.i.d 1% cream b.i.d x 1 week	Continue topical for 7-14 days beyond symptom resolution.
Oral	Itaconazole	200-400mg o.d 1 week	
	Flucinazone	150 -300mg x 1 dose/week, repeat for 4-6 weeks	
Tinea cruris	Terbinafine	250mg o.d x 14 days	Continue topical for 7-14 days beyond symptom resolution
Topical	Econazole cream Miconazole Ketoconazole cream Terbinafine cream Ciclopirox cream	b.i.d x 2-3 days b.i.d x 2-3 weeks b.i.d x 2-3 weeks b.i.d x 2-3 weeks b.i.d x 2-3 weeks	
Oral	Itaconazole	200-400mg o.d x 1 week	
	Fluconazole	150-300mg x 1 dose, repeat in 1 week	
	Terbinafine	250mg o.d x 10 days	Adjunct only; reduces fungal shedding
Tinea Capitis			
Topical	Ketoconazole cream Ketoconazole shampoo	0.d o.d	
Oral	Itaconazole	5 mg/kg per day x 4-6 weeks	
	Terbinafine	3-6mg/kg per day x 4-8 weeks	
	Fluconazole	3-6mg/kg per day x 6 weeks (oral solution)	
Tinea Unguium			
Topical	Ciclopirox 8% nail lacquer	o.d 8 hours before hand washing, remove every week with alcohol	For mild-moderate onychomycosis caused by T.rubum; only 5-8% cure rate
Oral			

	Terbinafine	finger nail 250mg o.d x >6weeks	
	Itraconazole(continiuos)	toe nail 250 mg o.d x 12 weeks	
	Itraconazole (pulsed)	finger nail 200mg o.d x 1 month toe nail 200 mg o.d x 1month	
	Fluconazole	Finger nail 400mg o.d x 7 days, repeat in 1 month	
		Toe nail 400mg o.d x 7 days, repeat for 3-4 months	
		Fingernail 150- 300mg/week x 3-6 months	
		Toenail 150-300mg /week x 6-12 months	

Infected Scabies

Clinical feature:

1. Generalized itching, more at night
2. Family members are usually affected
3. Site of involvement: finger web, flexor of wrist, anterior cubital fossae, nipple, umbilicus, genitalia.

Treatment:

Principles of treatment of scabies

1. Appropriate medication
2. Treat the whole body from head to toes
3. Treat all the contacts
4. Treat secondary infection if present

List of Agents Used in the Treatment of Scabies

Topical Agents: Permethrin 5% cream

Lindane 1% cream or lotion

Benzyl Benzoate lotion 25%

Monosulfiram 25% lotion

Crotamiton 10% cream

Precipitated sulfur 2-10% ointment

Oral

Ivermectin

Follow up at 1 and 4 week after treatment.

Instructions to parents/ patients

1. The medicine should be applied to clean dry skin
2. The medication provided should be rubbed into the skin
3. All parts of the body from head downward whether involved or uninvolved should be treated
4. Treatment is best done at night before going to bed.
5. Avoid touching any mucosa (oral or ocular) with hands
6. Change clothing and bed sheets the next day and launder them
7. Everyone in the house should be treated at the same time.
8. Itching may persist for a few days after treatment, but never reapply medication without doctors advice

CDC recommendation for treatment of Scabies

Drugs	Instruction of use
Permethrin 5% cream	Apply to the whole body from neck down and wash off after 8-14 hours
Lindane 1% lotion	Apply thinning to the whole body from head to neck down and wash off completely after 8 hours
Crotamiton lotion	Apply thinning to the whole body from head to neck down and wash off completely after 8 hours
Monosulfiram 5% lotion	Apply thinning to the whole body from head to neck down and wash off completely after 8 hours

Treatment in special situation

Situation	Drugs Indicated	Contraindication
1. Pregnancy and lactation	6% Sulfur precipitate Permethrin Benzyl Benzoate	Ivermectin Lindane
2. Scabies in Infant	Sulfur 2-6% in petrolatum >2 month Permethrin 5%	Ivermectin Lindane
3. Scabies in Children	Permethrin 5% cream 12-25% BBL	Lindane

Steven Johnson Syndrome

Introduction: Steven Johnson Syndrome (SJS) is a drug reaction.,

Clinical Assessment:

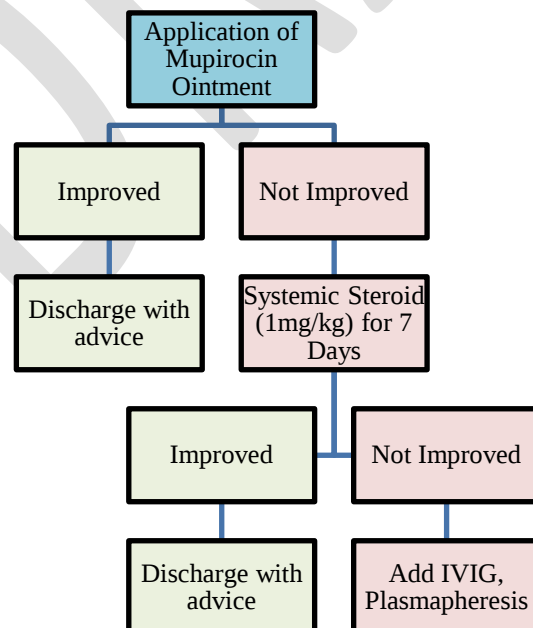
H/O drug Intake

Investigation:

1. CBC, ESR (Raised)
2. RBS, HbA1c
3. SGPT
4. S. Creatinine, S Elcetrolytes, Urine RME
5. CXR P/A View

Management:

1. I/V saline Infusion: Inf. 5% D/A (1L) + Inf. 5% DNS (2L) daily for 7 days
2. Inj. Omeprazole: 1 vial b.i.d for 7 days
3. Oral or Parenteral Azithromycin 500 mg daily for 7 days
4. Plenty of oral fluids
5. High protein diet
6. Application of Mupirocin Ointment



Urticaria

Introduction: Urticaria is caused by localized dermal oedema.

Types:

1. Acute (< 6 weeks)
2. Chronic > 6 weeks)
3. Urticarial Vasculitis

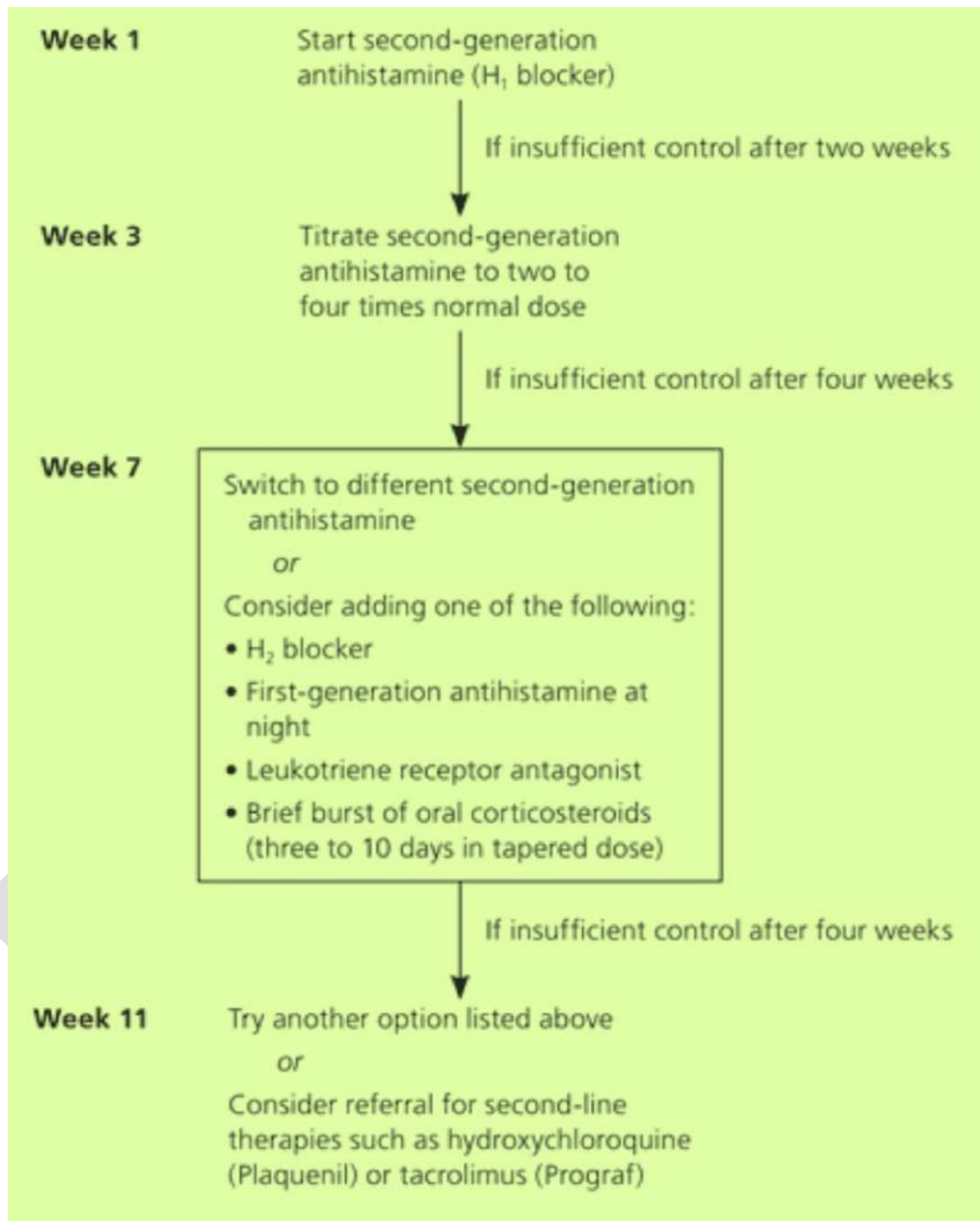
Clinical assessment:

1. H/O Allergies
2. Drugs
3. Contact
4. Infections
5. Exposure to physical elements (Heat, Cold, Sweat, etc.)
6. Others (SLE, Pregnancy, etc).

Investigations:

1. CBC (eosinophilia in parasitic diseases), ESR (high in vasculitis)
2. Total Ig E and specific Ig E (if available) to possible allergens
3. *If systemic diseases suspected:*
 - a. Urea and electrolytes
 - b. Thyroid Function Tests,
 - c. Liver function tests
 - d. ANA

Management:



Poisoning

Alcohol Poisoning

Taking a Brief Alcohol History including:

A. Consumption:

- Consumption in units of alcohol per day/week
- Drinking pattern daily/continuous or episodic/binge drinking?
- Drinking behaviour in last week and last 6 months
- When did patient last drink?

B. Alcohol dependence:

- History of morning/relief drinking?
- Change in tolerance?
- Strong compulsion to drink?
- Continued drinking despite problems?
- Priority of drinking over other pursuits/activities?

All indicative of dependence syndrome.

C. Alcohol-related problems:

- Co-existing health conditions (including co-existing drug and/or mental health problems)?
- Risk of harm to Self ± Others?
- Urgency for treatment?
- Motivation and readiness to change?
- History of withdrawal symptoms (sweating, tremor, nausea/vomiting anxiety, insomnia, seizures, hallucinations, delirium tremens)?

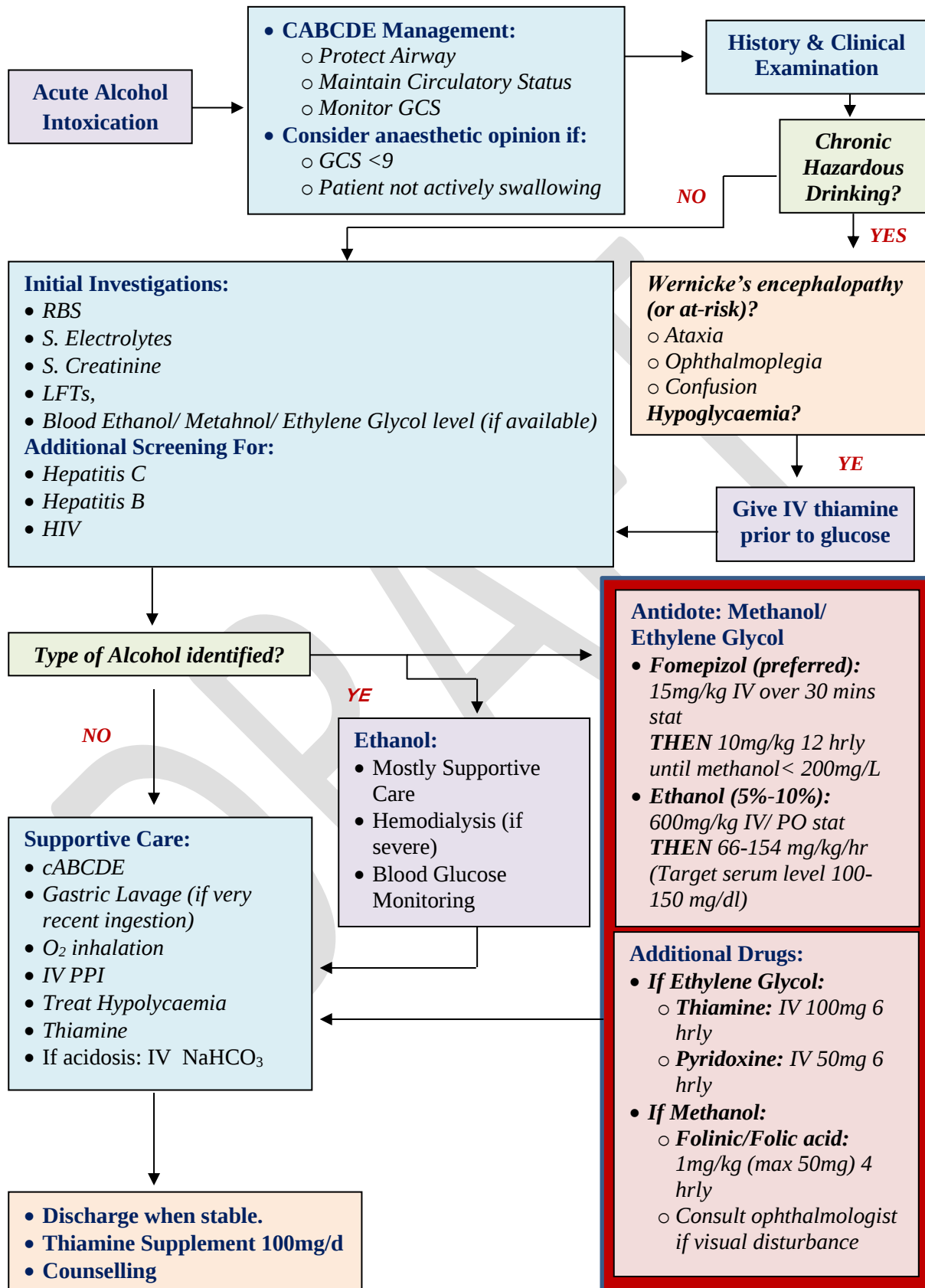
Examination:

Alcohol may affect any Organ/ Organ System

Specific physical signs:

- Spider naevi.
- Palmer erythema
- Dupuyten's contracture
- Gynaecomastia
- Telangiectasia
- Facial mooning
- Parotoid enlargement

Management of Alcohol Poisoning Algorithm:



Poisoning by Drugs

Benzodiazepines (BDZs) are the most commonly used sedative agents in Bangladesh and hence commonly abused. Elderly individuals and very young persons are more susceptible to the toxic effect than people in other age groups

Common BDZ Drugs:

- Diazepam
- Alprazolam
- Clonazepam
- Bromazepam
- Midazolam

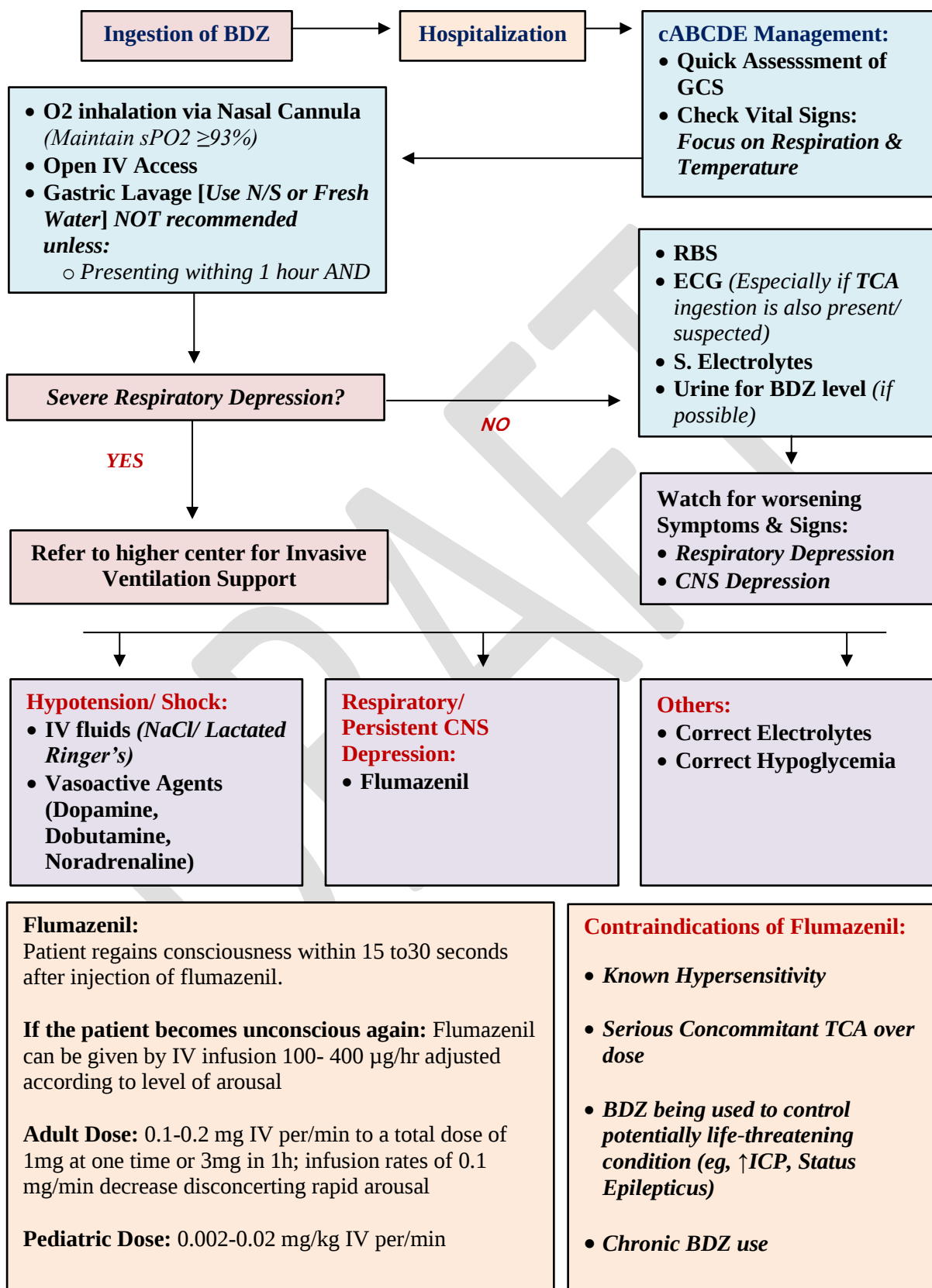
History: History should include the time, dose, and intent of the overdose. Determine if co-ingestants are present and the duration of benzodiazepine use. Symptoms include – Dizziness, Confusion, Drowsiness, Blurred vision, Unresponsiveness, Anxiety and Agitation.

Examination: The physical examination should focus on the patient's vital signs and cardiorespiratory and neurologic function. The frequently found physical signs are- nystagmus, hallucinations, slurred speech, ataxia, coma, hypotonia, weakness, altered mental status, impairment of cognition, amnesia, paradoxical agitation, respiratory depression and hypotension

Management:

- Supportive care: most Patients improve with only supportive care
- Antidote:
 - in severe CNS depression (non-responding) with severe respiratory depression or ineffective respiration
- Referral to a higher centre:
 - Ineffective respiration/ respiratory depression
 - Concomitant TCA overdose
 - CNS depression/ coma persists after 24 hours
 - If antidote is not available when needed

Benzodiazepine (BDZ) Poisoning Management Algorithm:



Psychotropic Drugs:

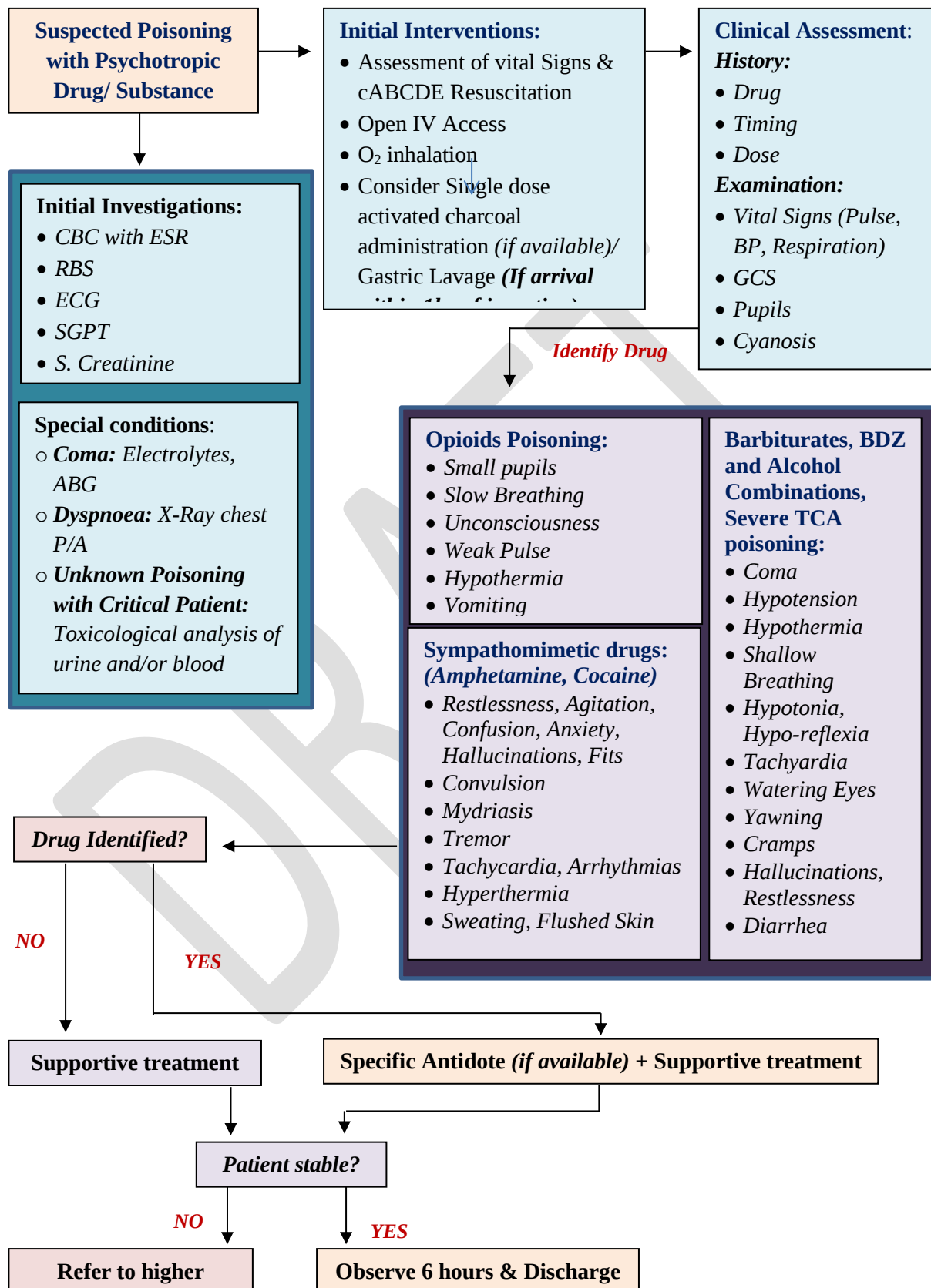
A chemical substance that changes brain function and results in alterations in:

- Perception
- Mood
- Consciousness

These include:

- Psychiatric medications
 - Anxiolytics
 - Antidepressants
 - Mood Stabilizers
 - Anti-Psychotics
- Recreational Substances
 - Alcohol
 - Cocaine
 - LSD
 - Cannabis
- Drugs for pain management:
 - Opiate Narcotics: Morphine, Codeine
 - Pregabalin
 - Anesthetics

Management of Psychotropic Drugs Algorithm (Except Alcohol):



Pesticide Poisoning

Introduction:

It is the most common poisoning found at different level of hospitals of Bangladesh

Clinical features:

- Characteristic odour of OPC
- Bradycardia
- Hypotension
- Incontinence of Urine & Stool
- Miosis
- ↑Secretions: ↑Salivation, ↑Sweating, Bronchorrhea

Antidote Dosing for OPC Poisoning:

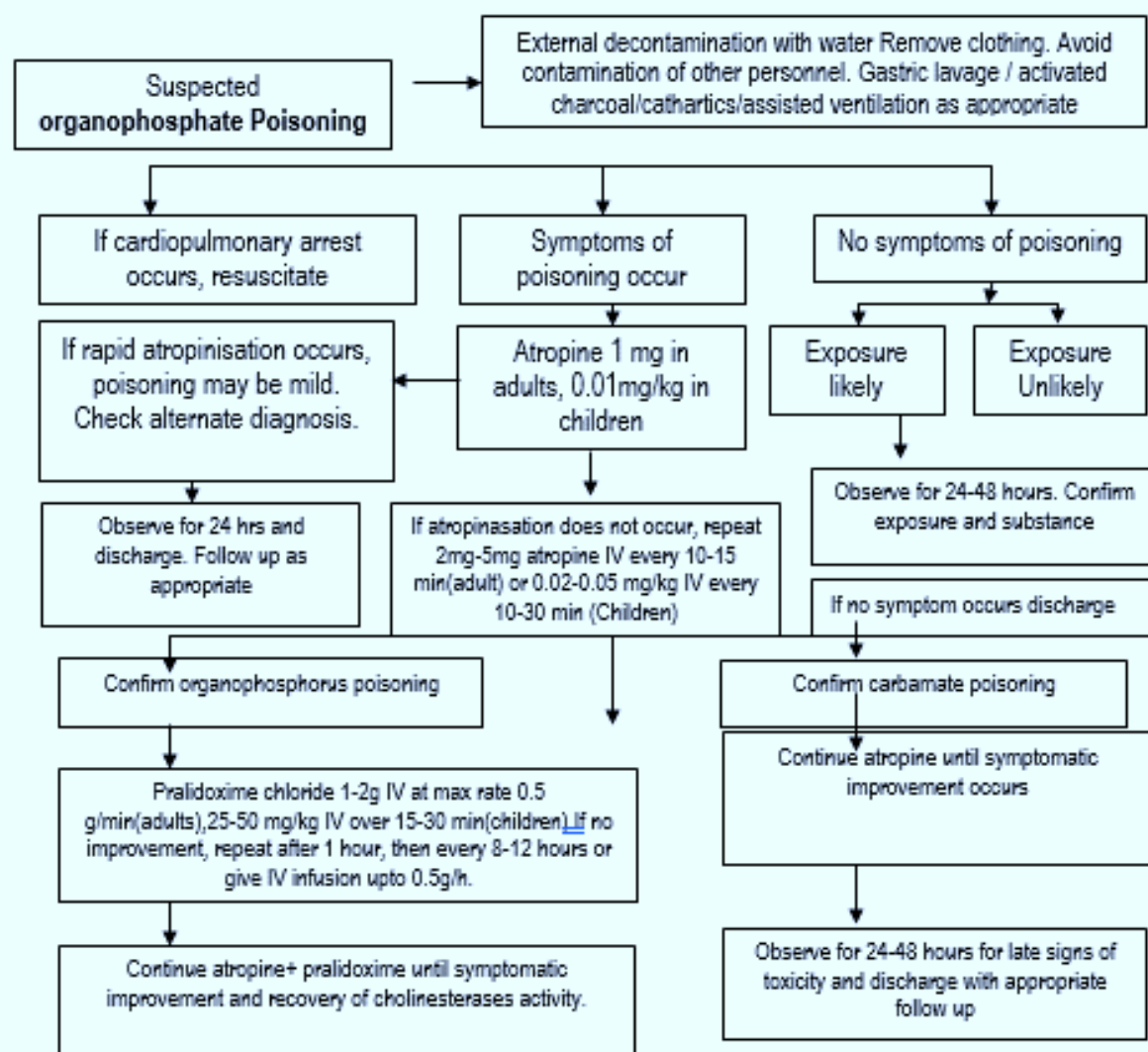
A. Atropine:

1. Inj. Atropine 2 amp (1.2 mg) IV stat followed by doubling of doses every 5 mins interval until full Atropinization occurs
2. Check vital signs at 10 mins intervals
3. Once atropinized, calculate the total amount required and give 10-20% of calculated dose/ hr with IV N/S as maintenance dose
4. Check vital Signs at 30 mins intervals for 3 hours, hourly for 6 hours 3-6 hourly for next 24-48 hours
5. If Atropinizations is lost: (eg; bronchospasm, bradycardia etc.) start giving bolus dose again until they disappear and Add 20% of bolus requirement to infusion/ hours

B. Pralidoxime:(only in cases of moderate- severe OPC poisoning cases)

1. Inj. Pralidoxime chloride IV
Adult: 1-2 g/IV stat (Adult)
Child: 25-50 mg/kg IV over 15-30 mins
2. If no improvement: Repeat after 1 hour. THEN 8-12 hrly until improvement

ALGORITHM: APPROACH TO THE MANAGEMENT OF POISONING DUE TO ORGANOPHOSPHATE PESTICIDES



Unknown Poisoning

The unknown poisoning are cases which brought to the hospital where there is no clue about the poisoning substance. The physicians are occasionally confused with the diagnosis and management. Commonly travel related poisoning using public transport is found to be the unknown poisoning but there are also cases where the actual agents could not be evaluated through history or circumstances.

The Key Features of unknown poisoning

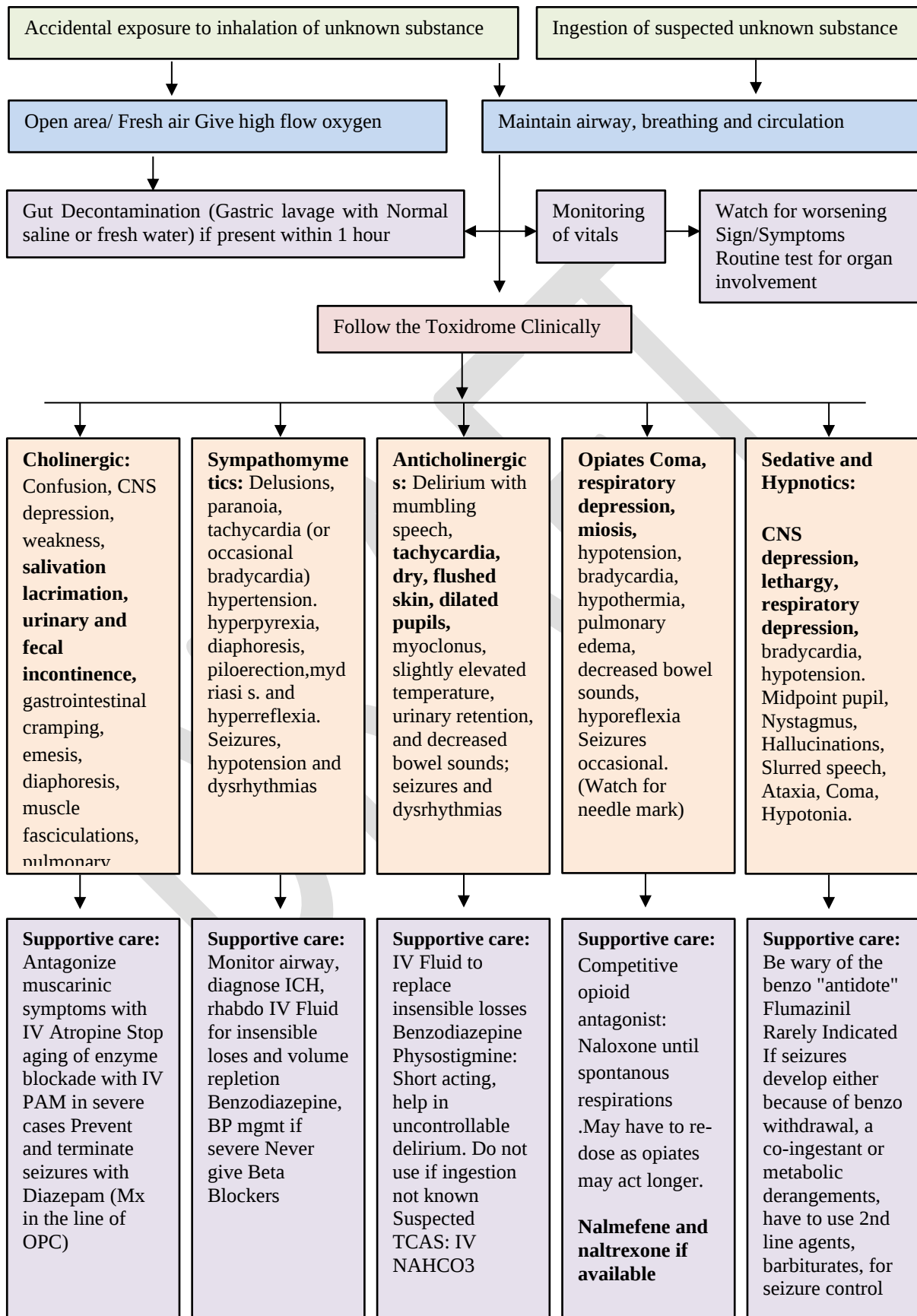
- Victims mostly brought to the hospital by police or attendant in a drowsy state
- Most of the victims had lost their valuables including money
- Fortunately most of the patients are recovered and discharged within 24 hours after admission uneventfully without any specific treatment

Management Protocol must be followed

- Rapid assessment of the vitals. Measure Pulse, BP, Respiration and Temperature immediately
- Assess the state of consciousness by Glasgow Coma Scale (GCS)
- In all cases put the patient in to lateral position with the lower leg straight and the upper leg flexed; in this position the risk of aspiration is reduced
- Clear airway passage by removal of any obstructing object, vomit or dentures, and by backward pressure on the mandible. Patient who are awake and talking- Likely to have intact airway. In obtunded patients check for gag reflex. Nursing care of the mouth and pressure areas should be instituted
- Check for Breathing by observing efforts of ventilation, respiratory rate, cyanosis and use of accessory muscle of respiration. Institute oxygen if required
- Put an Intravenous (IV) cannula but administration of IV fluids is unnecessary unless the patient has been unconscious for more than 12 hours or is hypotensive. Normal saline (0.9% NaCl) will be the fluid of choice

Refer the patient to a higher centre:

- Patient remain sedated or unconscious more than 24 hours
- Patient having co-morbidity
- Patient having respiratory depression
- Patient developing/worsens vital sign



Rheumatoid Arthritis

Definition: It is a chronic auto immune inflammatory destructive & deforming polyarthritis, characterized by bilateral symmetrical involvement of small and large joints with system and extra-articular feature with exacerbation and remission

Rheumatoid Arthritis

Common Symptoms:

- Pain and swelling of the joints
- Prolonged morning stiffness (>30mm) or stiffness after inactivity
- Bilateral, symmetrical involvement, small, joints of hand are almost always involved
- Fever, weight loss, fatigue

General Signs:

- Swelling and deformity of multiple joints in a symmetric fashion and often involving the hands
- May have Erythema
- May have extra articular features
- Anemia and lymphadenopathy are common
- Tenderness of joints on passive movement

Common Investigation:

- | | |
|-----------------|------------------------|
| • S. creatinine | • Urine R/M/E |
| • FBC, ESR | • RBS, HbA1C |
| • CRP | • X-ray chest P/A view |
| • RA, Anti-ccp | • X-ray hand |
| • SGPT | • MT |

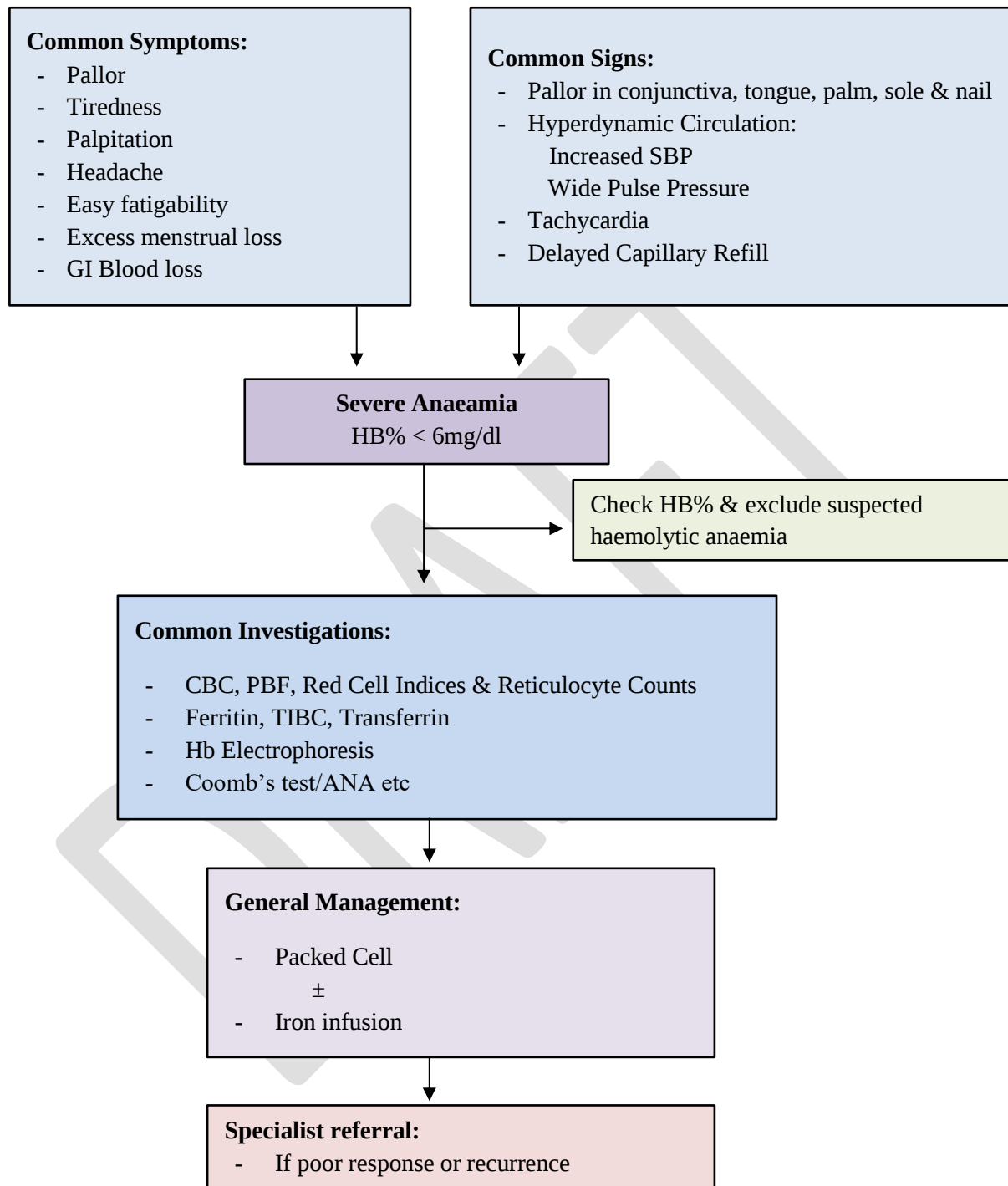
Treatment: (Often need specialist referral)

- NSAID: used as necessary
- DMARD:
 - MTX is the drug of choice.
 - Started at a lower, dose of 10-15 mg/week then gradually increased up to 25 mg/week
 - MTX dose is pillowed by tab Folic acid 5mg on the next day.
 - Sulfasalazine
 - Hydroxychloroquine
- Biological agent- abatacept, adalimumab, anakinra, certolizumab etc.
 - most effective with a conventional DMARD, for optimum duration
- Corticosteroids: As a bridge therapy before the onset of full action of DMARD
 - Usual dose: 30 mg/day, decrease over 12 weeks

Follow up: Life long

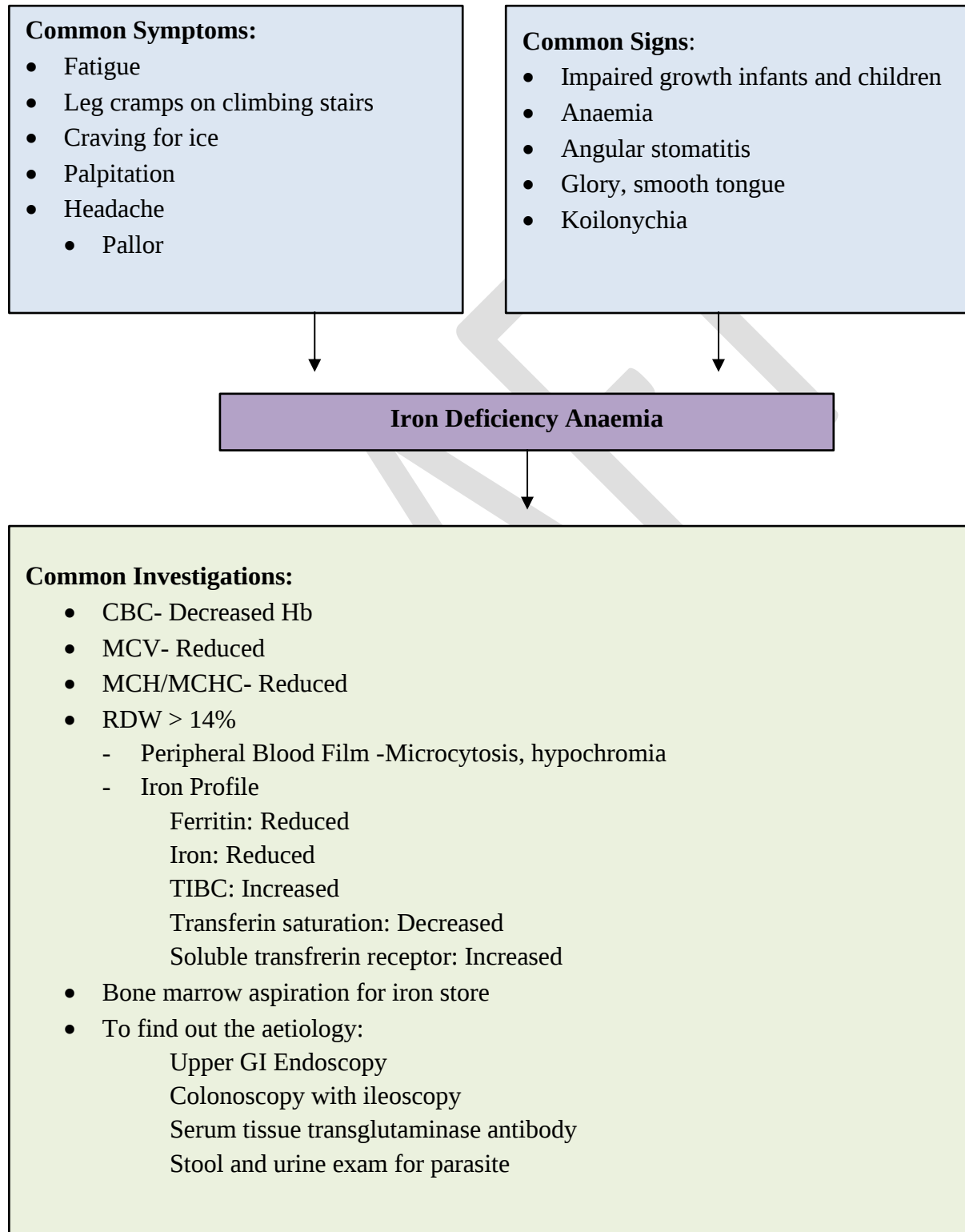
- Monitoring of disease actively
- Escalation of DMARD for non-responders
- Side effects of drugs &
- Complication of disease

Severe Anaemia



Iron Deficiency Anaemia

Iron deficiency anaemia develops when body stores of iron drop too low to support normal need blood cell production. It occurs when losses or physiological requirements exceed absorption.



General Management:

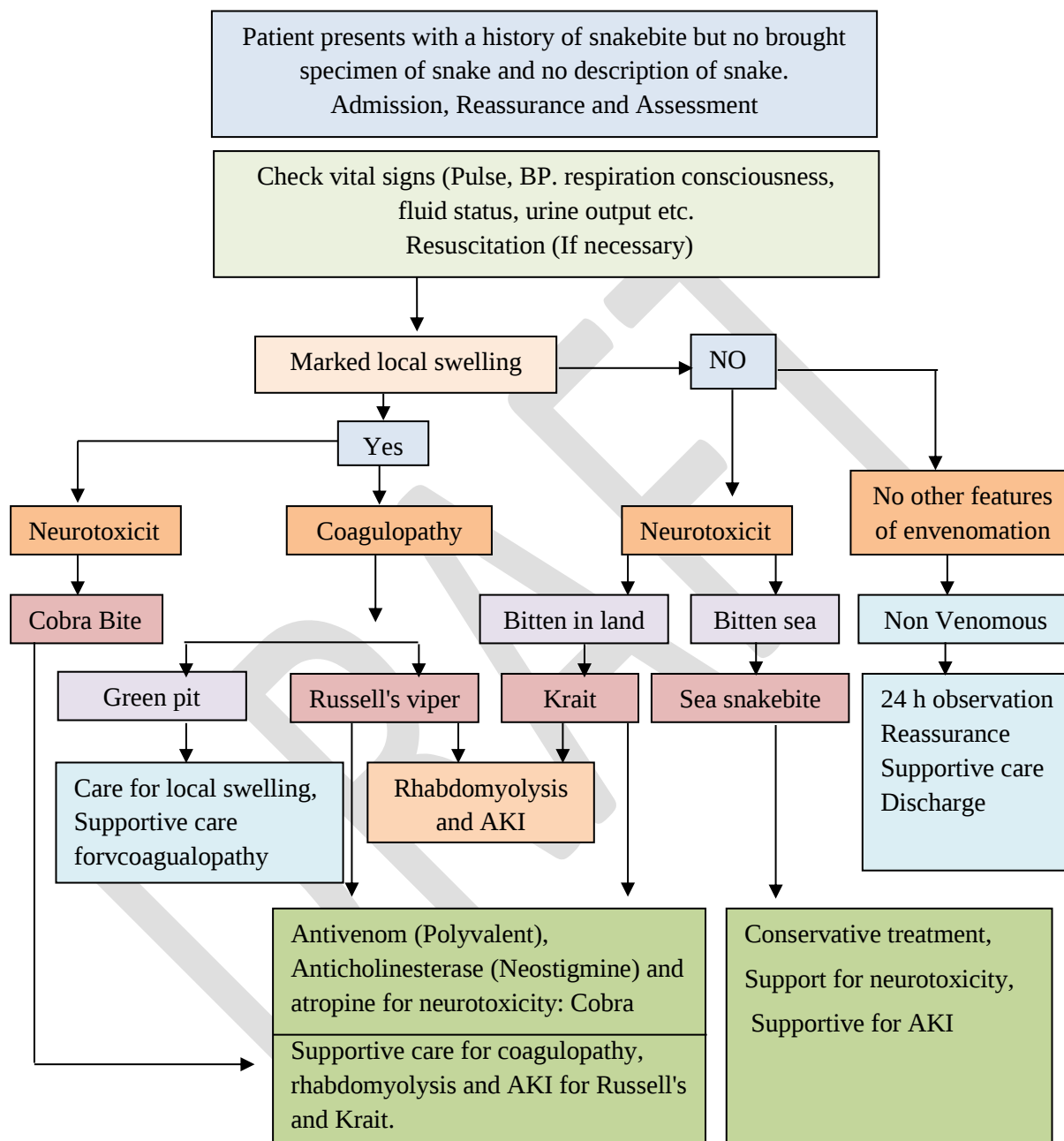
1. Ferrous sulphate - 200mg 3 times daily -3-6 months
2. Ferrous gluconate - 300mg 2 time daily 3-6 months
3. Blood
4. if: Evidence of hypoxia
 - Angina
 - Heart failure
5. Parenteral Iron therapy:
 - Malabsorption ----Iron
 - Chronic gut therapy----Iron sucrose
 - Chronic kidney disease----Iron isomaltose
 - Inability to tolerate oral iron preparation----Iron carbozylntose
6. Treatment of underlying aetiology

Follow up:

- Hb should rise 1.0gm/L in every 7-10days
- Reticulocyte count rises within-7 days
- Clinical response by improvement of symptoms

Snakebite

Approach to identification of common snakebite patients of Bangladesh by clinical syndrome and treatment principle



- The above clinical syndrome is applied for all areas of Bangladesh
- Russell's viper is more common in northern area (Rajshahi, Chapainobabgonj etc).

Identify the snake by brought specimen, description or by photograph. Identified as venomous, non-venomous, snake not identified, suspected snakebite, treat according.

Antivenom Therapy: If Systemic Envenoming or Local Envenoming

Indications for antivenom (AV): AV treatment is recommended if and when a patient with proven or suspected snakebite develops one or more of the following signs.

Indications of AV therapy		
Systemic signs	Clinical	Laboratory
Haemostatic	Spontaneous systemic bleeding	20WBCT Prothrombin time, Thrombocytopenia ($<100 \times 10^9/\text{litre}$ or $100\,000/\text{cu mm}$)
Neurotoxic signs	Ptosis, external ophthalmoplegia, paralysis etc	
Cardiovascular abnormalities	Hypotension, shock, cardiac arrhythmia	Abnormal ECG
Acute kidney injury (renal failure)	Oliguria/anuria	Rising S. creatinine / urea
Haemoglobin-/myoglobin-uria	Dark brown urine, muscle aches and pains (feature of generalized rhabdomyolysis)	Urine dipsticks, Hyperkalemia Low Hemoglobin/ Haematocrit
Local envenoming		
Local swelling involving more than half of the bitten limb (in the absence of a tourniquet) within 48 hours of the bite. Swelling after bites on the digits (toes and especially fingers). Rapid extension of swelling (for example, beyond the wrist or ankle within a few hours of bite on the hands or feet). Development of an enlarged tender lymph node draining the bitten limb		

It is never too late to give AV provided the indications are present: Only if features of **systemic** envenoming are present for bites of snakes mentioned in the above box

Do not give AV for local envenoming alone, except for Cobra and Russell's viper bites when indicated.

Commence AV immediately if indicated for the bites of: Cobra, Krait, Russell's viper

Currently available AV is not recommended for the bites of: Green pit viper, Sea snake

- Dose: 100 ml (10 amp/vials) of polyvalent AV mixed with 100 ml of normal saline should be infused intravenously over one hour.
- Start infusion at a lower rate, monitor for 10-15 minutes.

Adult and children should receive same dose of AV

Before initiating AV, prophylactic subcutaneous adrenaline (dose - adult 0.25 ml of 0.1% solution and in children 0.005 mg/kg) should be given to the victim.

Adrenaline is available as 0.1% (1 in 1000) solution, 1 ampoule containing 1 ml.

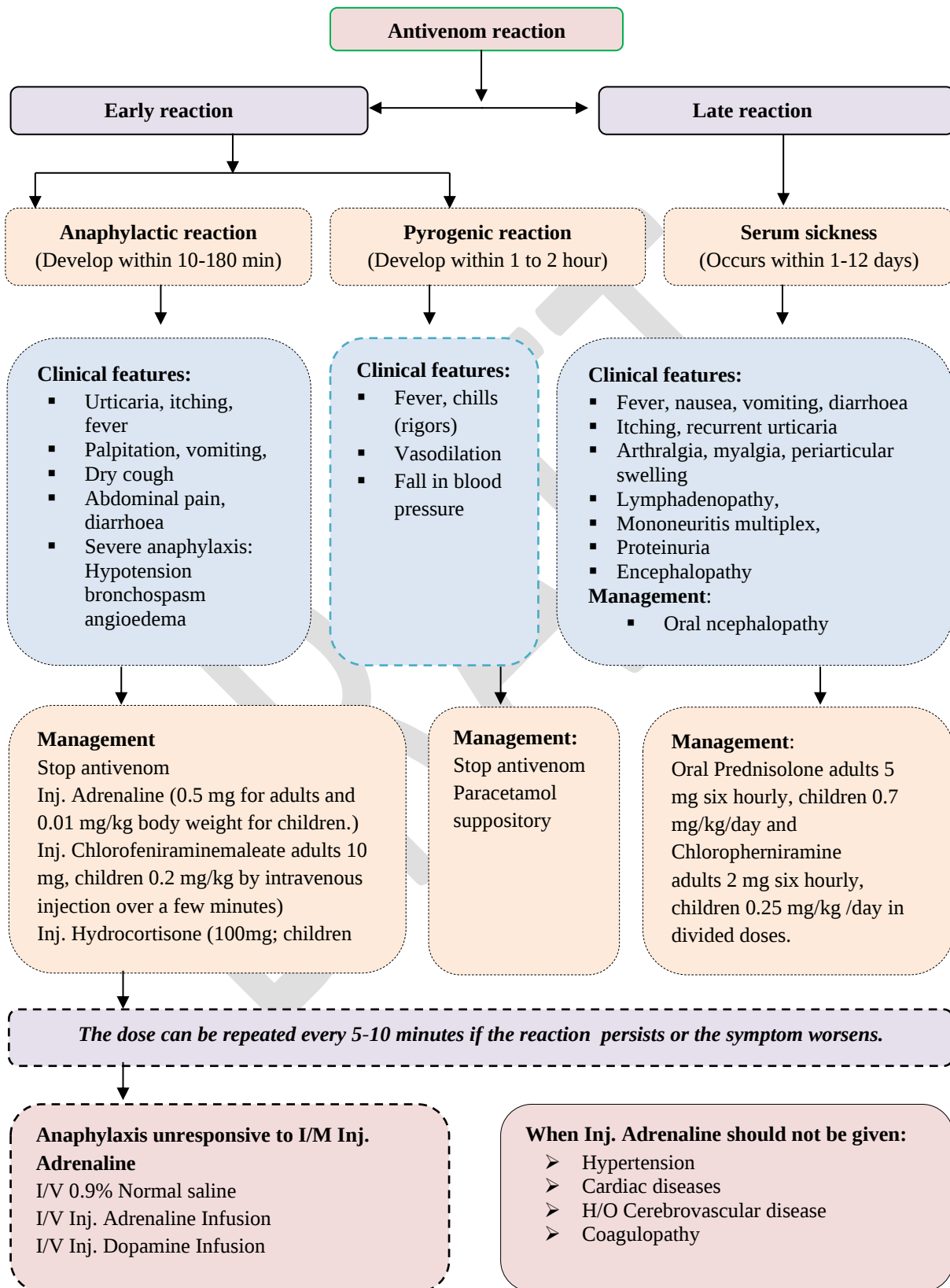
Draw adrenaline in an Insulin syringe (100 unit) upto mark 25 (for adult), administer Subcutaneously (in case of premedication).

For treatment of anaphylaxis, draw 0.5 ml of adrenaline (for adult) & give IM.

CAUTION: Have Adrenaline (+Inj. Hydrocortisone, Inj. Anti histamine) available at bedside.

Observe the patient carefully during the time of administration of antivenom and upto 3 hours for signs of anaphylaxis.

Antivenom reaction is not uncommon but rarely fatal. Appropriate timely management of AV reaction.



Lower Uterine Caesarian Section (LUCS)

It is a surgical procedure to deliver the baby through a transverse incision is made in the lower uterine segment above the attachment of the urinary bladder to the uterus.

Types-

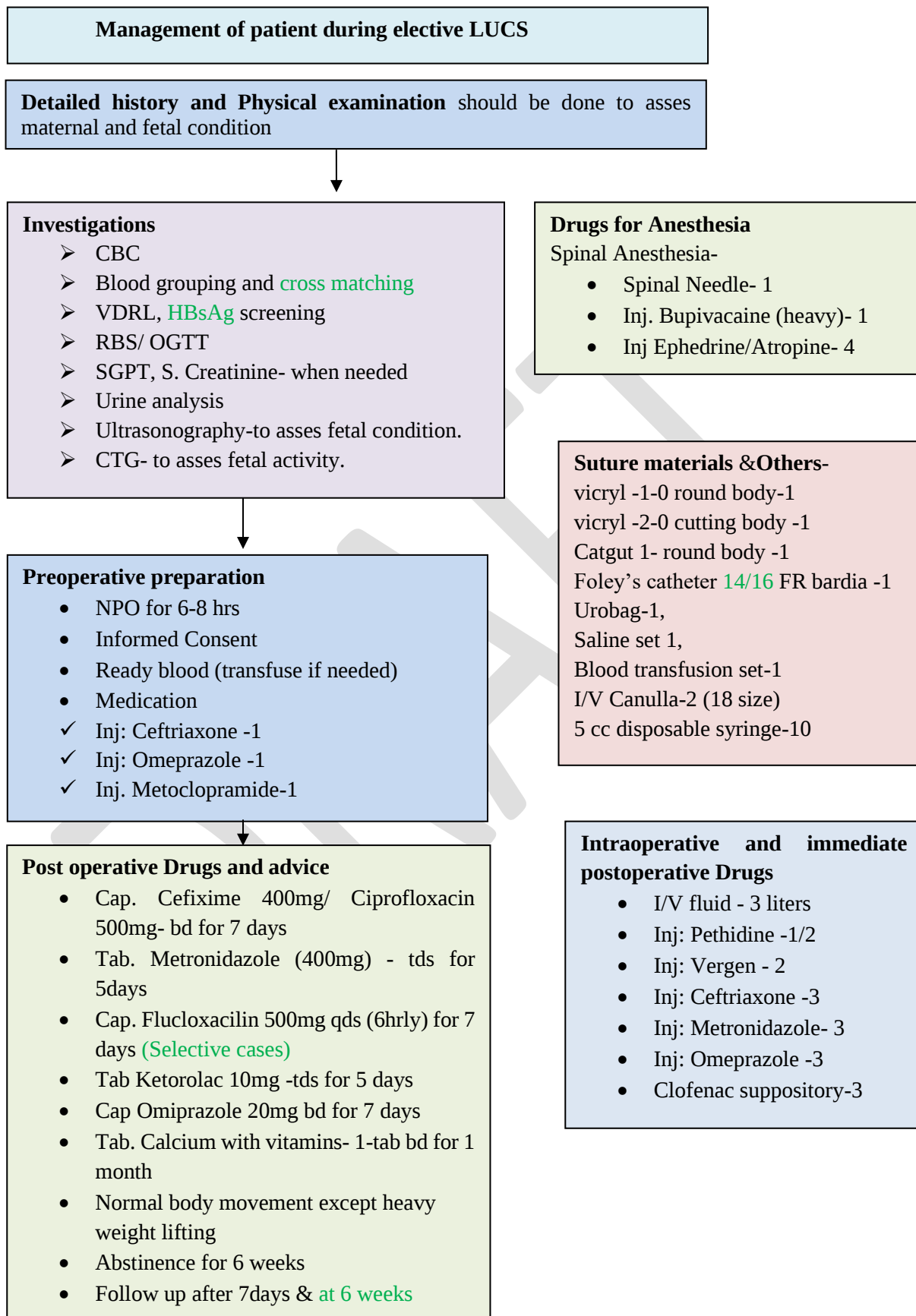
1. Elective (planned)
2. Emergency

Time of delivery

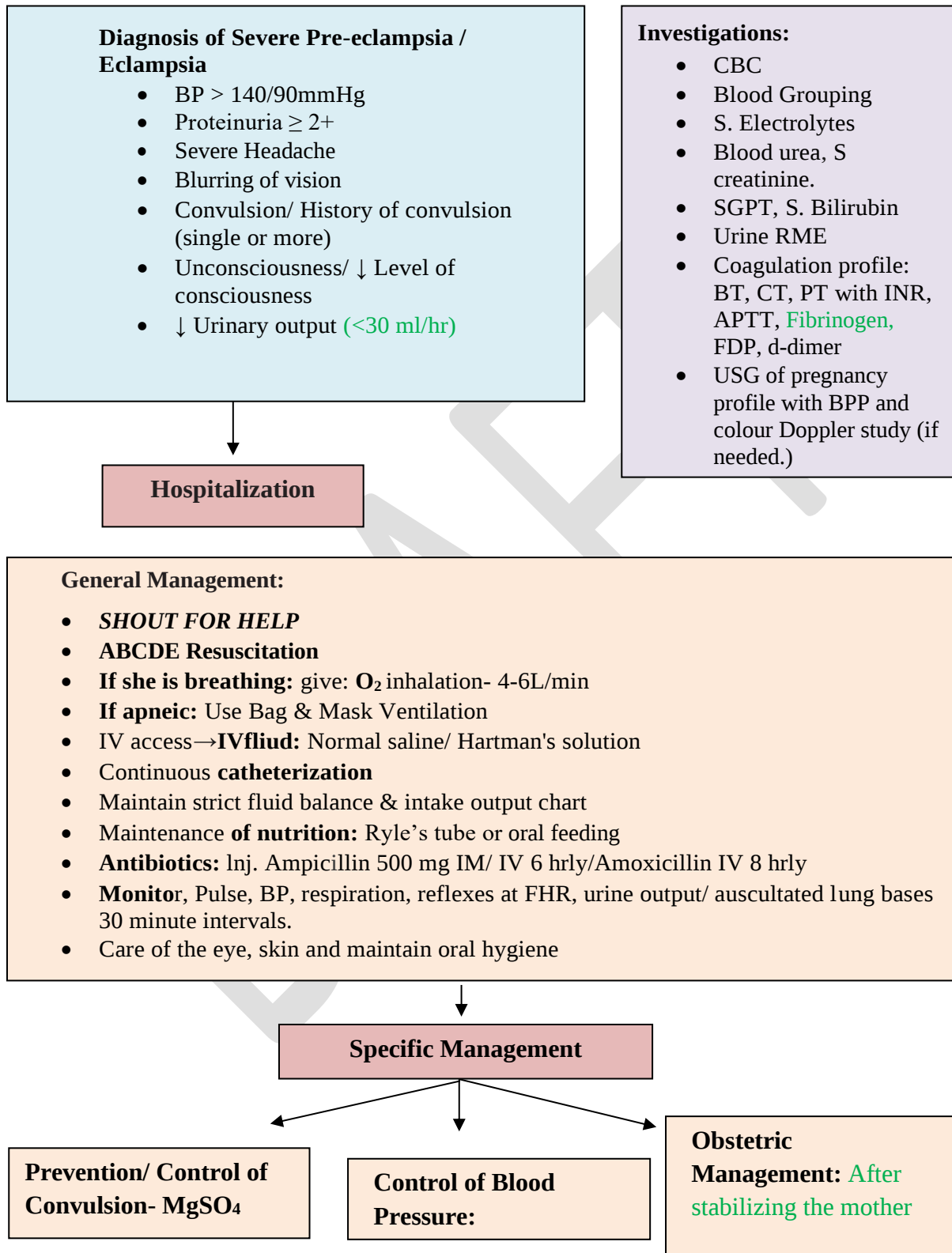
- Usually planned between 38- 39 weeks of pregnancy if not otherwise indicated.
- When c/s is indicated prior to 37 weeks' - corticosteroids to the mother should be considered.

Indications for 'elective' Caesarean section:

- Breech presentation (at term)
- Other malpresentations – e.g. unstable lie, face /shoulder presentation, transverse lie or oblique lie. (When can't be corrected conservatively)
- Twin pregnancy – when the first twin is not a cephalic presentation.
- Maternal medical conditions (e.g. cardiomyopathy) – where labor would be dangerous for the mother.
- Fetal compromise (such as abnormal fetal Dopplers) –.
- Transmissible disease of mother (e.g. poorly controlled HIV, HSV etc).
- Placenta previa – Central/ type II posterior
- Maternal diabetes with a baby estimated to have a fetal weight >4.5 kg.
- Previous major shoulder dystocia
- Previous successful repair of 3rd/4th degree perineal tear
- Maternal request –after proper counselling



Eclampsia



Specific management of Eclampsia		
Prevention/ Control of Convulsion- MgSO₄ Therapy: Pre-Requisites: 1. Respiratory rate > 16 breaths/min 2. Urine output- >30ml/hour 3. Knee Jerk Present Loading Dose: 1. I/V & I/M protocol- 3g deep IM in each buttock and 4g in 12 ml d/w i/v over 10-15 min 2. Only I/M protocol- 5gm in each buttock Maintenance dose: 1. 2.5 gm I/M 4hours after loading dose 2. Continue 4 hourly in alternate buttock up to 24 hours after last convulsion or delivery (Whichever is longer) OR <i>Inj. Nalepsin 1 amp / vial = (4gm/100ml) 1 vial I/V @ 60-70 drop/min . then 1 vial I/V @ 6 drop/min for 24 hours</i>	Control of Blood Pressure: If Diastolic BP <110mmHg: Oral drug is prescribed • <i>α-Methyl Dopa (500mg-2gm)/day</i> OR • Calcium Channel Blocker <i>5mg</i> twice daily OR • Labetalol <i>200 mg once or twice daily</i> If Diastolic BP >110mmHg mm Hg: OR <i>I</i> • Labetalol(20mg/amp p): ○ 1-amp I/V slowly every 15 minutes until DBP 90 mm of Hg OR ○ 250 mg in 250 ml Normal Saline, IV @ 20mg/hr OR Hydralazine(20mg/amp): ○ 5mg dissolved in 10 ml of DW, slow IV (1ml every 15 minutes) until Diastolic BP is 90 mm Hg OR <i>1amp in 200 ml Normal Saline, IV @ 8-10 drops/min</i>	Obstetric Management: Conduction of delivery within 6-8 hrs of convulsion Vaginal delivery if: • Favorable Cervix • ARM <i>or</i> Oxytocin induction • Avoid prolonged 2nd stage. • Forceps can be used LSCS if: • Unfavorable cervix(<i>BISHOP score ≤3</i>) • Malpresentation • Fetal distress • No progress of labor • Uncontrolled fits Choice of Anesthesia • Spinal Anesthesia • <i>Indication of G/A</i> ○ <i>Repeated fits</i> ○ <i>Thrombocyte count <1,00000/mm</i> ○ <i>Pulmonary edema with cardiorespiratory instability</i>

Important Tips

- If convulsion recurs after 30 mins of loading dose. give 2.5 gm inj. MgSO₄ slowly over **5mins**.
- If skilled provider to use **IV/IM** protocol is not available, give 5 gm i.m.in each buttock (only **IM** protocol)
- If MgSO₄ not available/contraindicated –inj diazepam 10 mg slowly over 2 mins and 40 mg in 500 ml normal saline in **IV** drip.
- Maintain IV fluids- normal saline over 6 hrs initially and closely monitor to avoid fluid overload.

Bed side clotting test: take 5 ml blood in a plain glass test tube, keep it upright, turn it after 5 minutes to see if clot forms. If fails to clot within 10 minutes -test positive (**coagulation failure**).

MgSO₄ Toxicity: (**RR<16/ min, urine output <30 ml/hr, absent knee jerk**).

- Omit next dose of MgSO₄
- Give inj. Calcium gluconate 1 gm. (10ml) slow **I/V** over 10 minutes.
- Assisted ventilation (**if needed**).

Pre-eclampsia/ Eclampsia with any complications:
(Consult with specialist or refer)

- CVD (Cerebro vascular disease)
- Acute pulmonary edema (severe respiratory distress)
- Acute renal failure (severe oliguria /anuria)
- DIC (bleeding from multiple sites including venipuncture site)
- HELLP syndrome (Hepatitis, elevated liver enzymes & low platelet count)
- Hyperpyrexia. (Temperature>104° F.)
- **Abruptio Placentae**

Hemorrhoids in Pregnancy

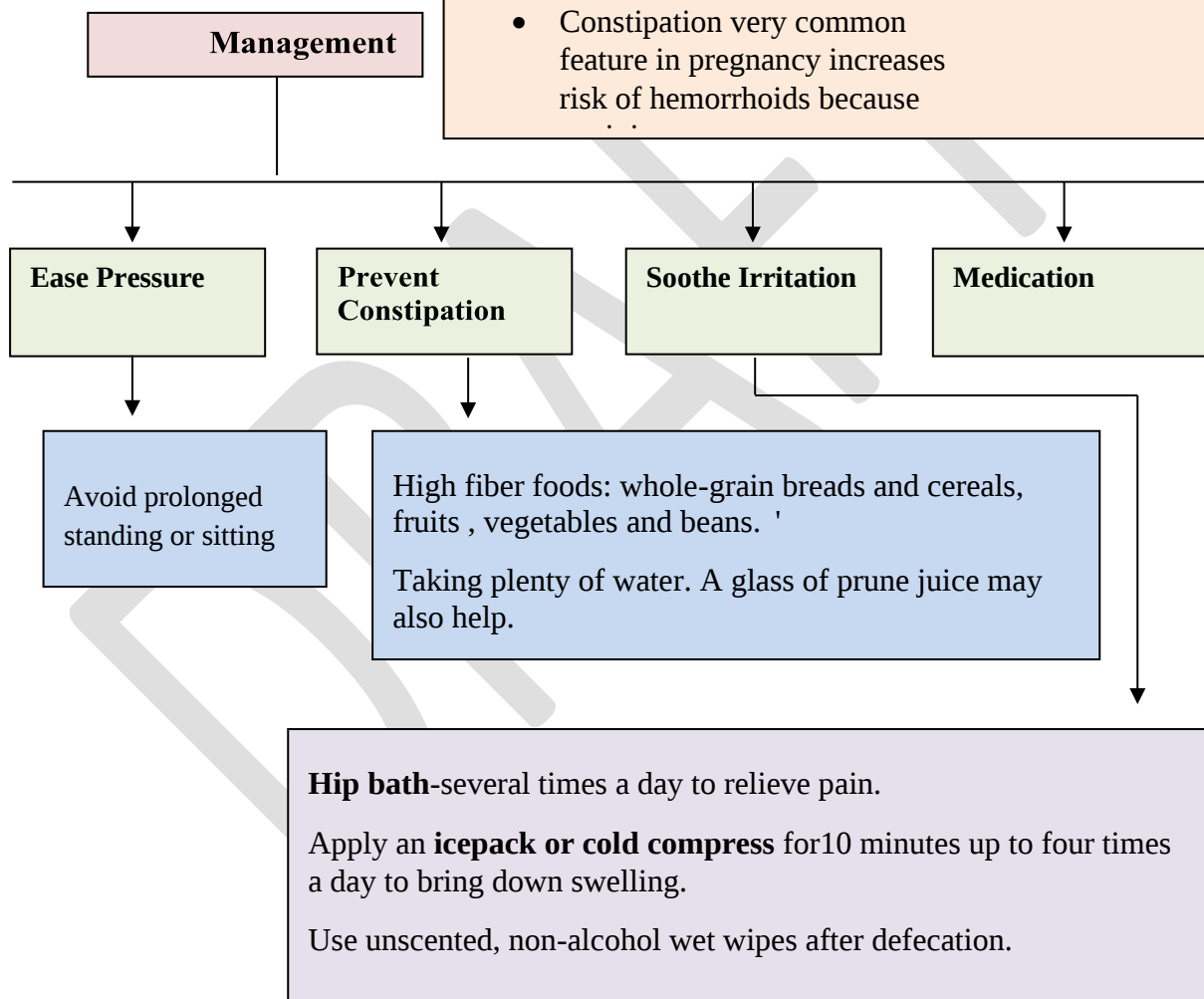
Hemorrhoids are swollen veins in rectum that can cause itching, burning, pain, or bleeding.

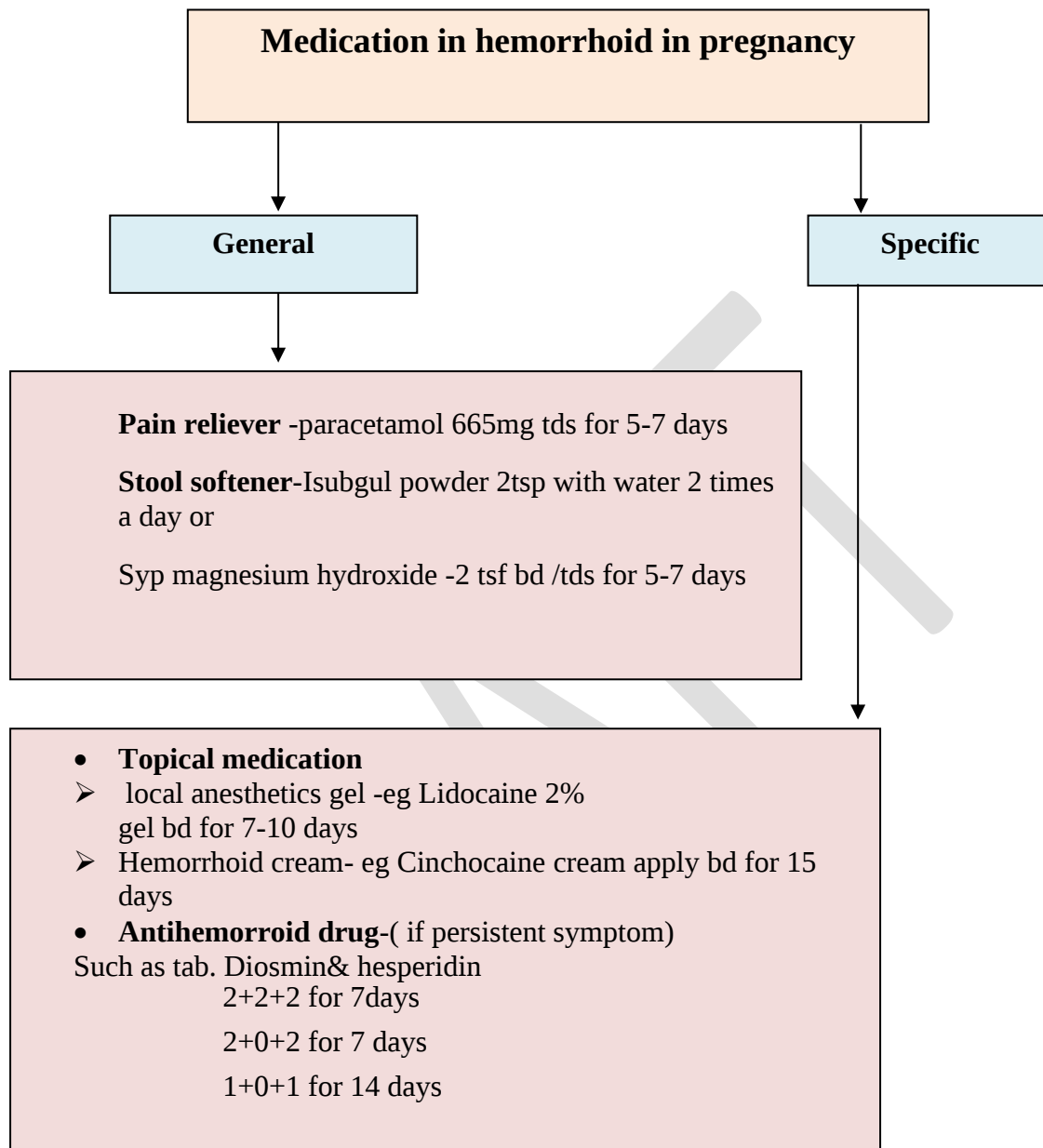
Common in pregnancy, especially in the 3rd trimester.

Risks in pregnancy

- Increased abdominal Pressure causes venous engorgement.
- Growing baby also puts pressure on the large veins behind uterus.
- Constipation very common feature in pregnancy increases risk of hemorrhoids because

Management





Hyperemesis Gravidarum

Hyperemesis gravidarum (HG) is a pregnancy complication that is characterized by severe nausea, vomiting, weight loss, and possibly dehydration.

Diagnosis by medical history, symptoms & signs

low blood pressure or a fast pulse and sign of dehydration

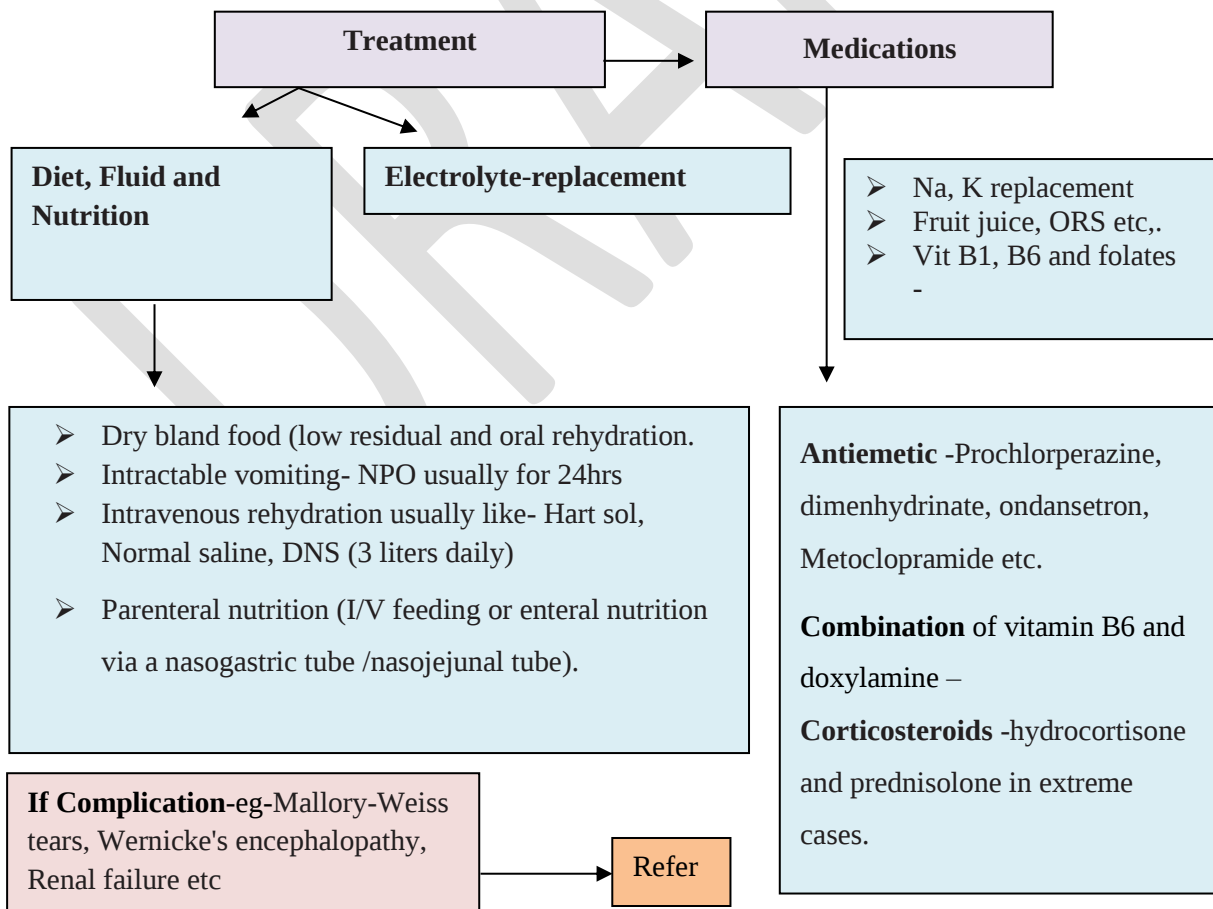
& by exclusion of other causes eg; UTI, Overactive Thyroid, Multiple pregnancy

Investigations

- **CBC and urine R/M/E**
- **S. Electrolytes.** Thyroid test- **FT4, TSH.**
- Liver function test- **serum bilirubin, SGPT;**
- Renal function test- **Blood urea, S. Creatinine**
- **An ultrasound of whole abdomen-** to exclude trophoblastic diseases, multiple pregnancy and other problem eg cholelithiasis

Risk factors

- Family history
- Multiple pregnancy
- Overweight
- Primigravida
- Trophoblastic disorder
- History of eating disorders.



Perineal Laceration/Tear

It is a laceration of the skin and other soft tissue structures which, in women, separate the vagina from the anus (so called gynaecological perineum)

Degrees and severity of tears

First-degree tears – small, skin-deep tears which usually heal naturally.

Second-degree tears – deeper tears affecting the muscle and fascia of the perineum as well as the skin.

Third-degree tear is a tear that extends into the muscle that controls the anus (external anal sphincter).

Fourth-degree tear- if the tear extends further into the lining of the anus or rectum it is known as a **fourth-degree tear**.

Third & fourth degree tear needs surgical correction.

Second degree tears sometimes need correction if patient demands/ symptom present.

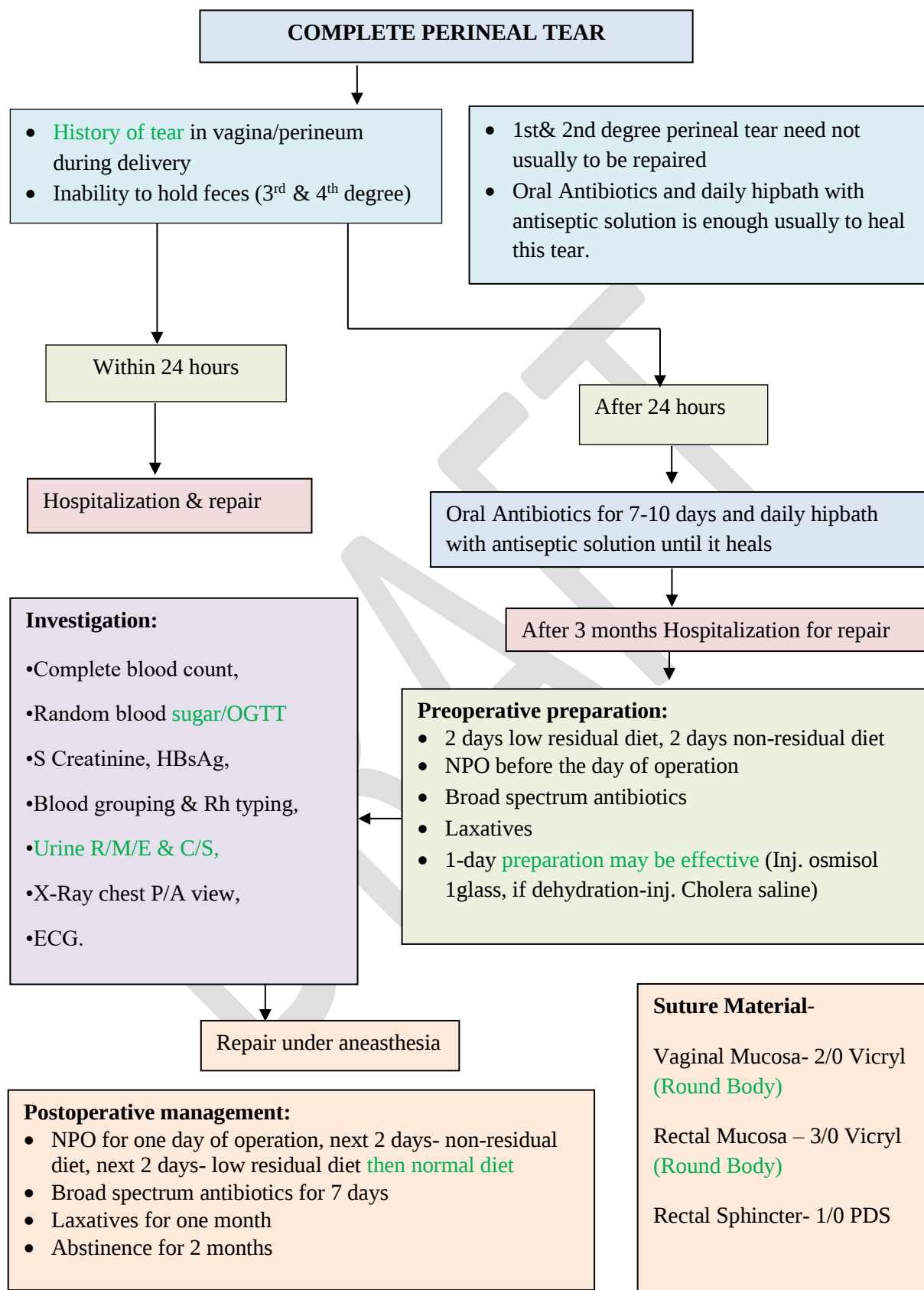
Risks of perineal tear during delivery

- Occiput- posterior position,
- Primigravida
- Large baby
- Precipitate labour
- Rigid perineum
- Breech Presentation
- Inadequate perineal guard during delivery of head

Prevention

Several techniques used to reduce the risk of tearing during labour

- Supporting the perineal tissue when head stretches.
- Regulates the speed of the baby's head during passage .
- the woman giving birth is guided to push along slowly
- Antenatal digital perineal massage in nulliparous women.
- 'Hands on' techniques employed by midwives, in which the foetal head is guided through the vagina at a controlled rate have been widely advocated
- Waterbirth and labouring in water- sometimes advocated.



Post-Partum Haemorrhage (PPH)

Diagnosis by Features:

- Excessive vaginal bleeding >500ml
OR
- Prolonged moderate bleeding
OR
- Any bleeding which deteriorates maternal condition after childbirth



A. General Management:

- Shout for Help
- ABCDE Resuscitation
- Massage fundus to expel blood clot
- Give 10 IU Oxytocin IM
- IV access with 2 wide bore cannula & infuse Normal Saline/ Hartmann's Solution with 20 IU oxytocin in 1L
- Inj. Ergometrine 0.2 mg IM + Tab. Misoprostol 800-1000 µgm P/R

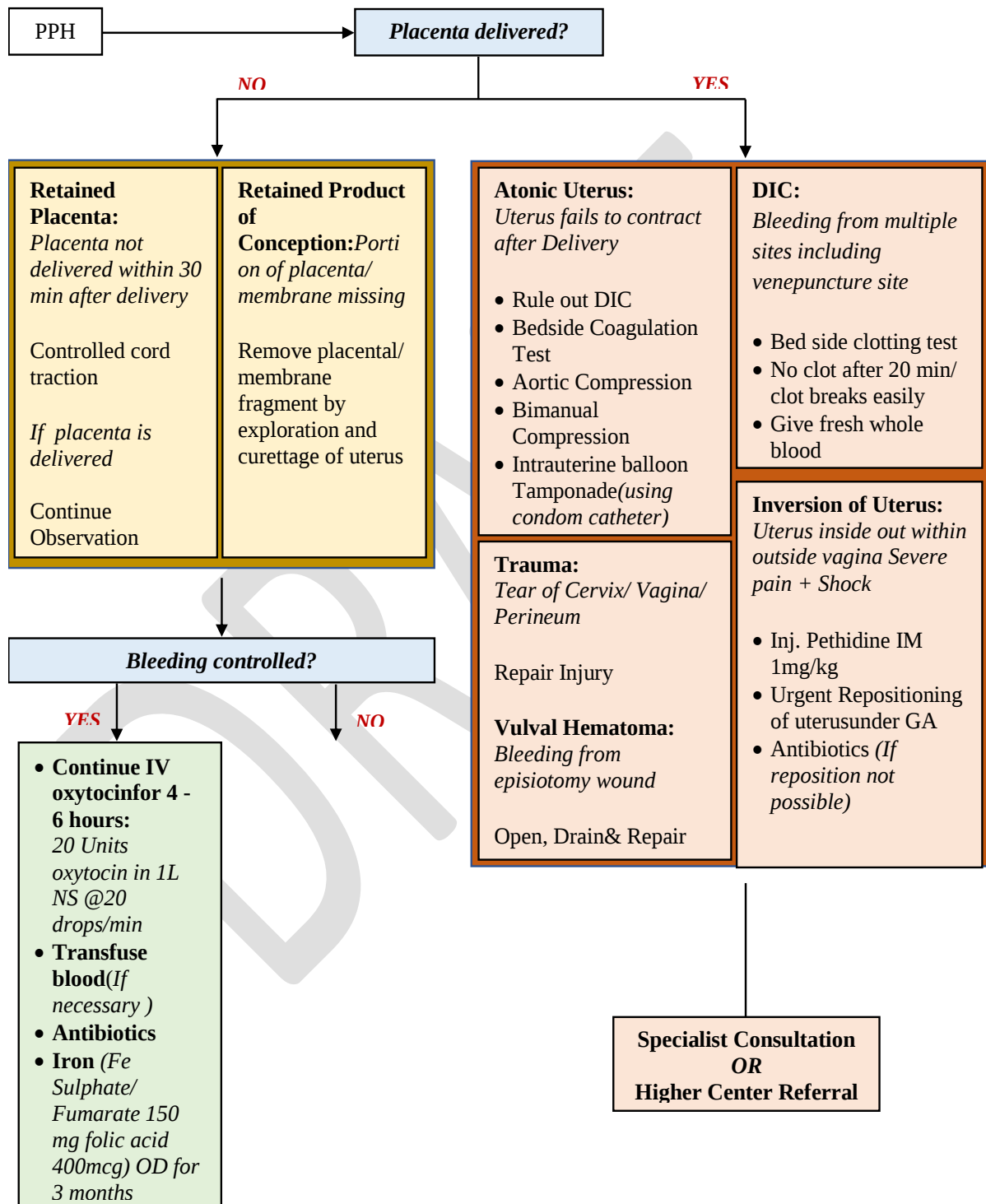
Counselling & Specific Management- **post partum bundle approach**

• If patient is in shock:

- Infuse 1L IV Fluid in 20 min
Then
- 1L IV Fluid in 30 min
Then
- Titrate rate of infusion according to response (*pulse settle down <100/min and systolic BP > 100 mmHg*)
- Urinary Catheterization
- Assess Vital signs, Monitor blood loss & Urine output until stable
- Send blood for: Hb%, Blood grouping
- Arrange blood for transfusion (if needed)

Flow Chart:

Determine the cause of PPH and manage accordingly (Palpate uterus, examine placenta, examine birth canal with good light and adequate exposure)



Hypertensive Disease of Pregnancy

Include pre-eclampsia, pre-eclampsia superimposed on chronic hypertension, gestational hypertension, and chronic hypertension in pregnancy.

Gestational Hypertension

Definition : Gestational hypertension is defined as having a blood pressure greater than 140/90 on two occasions at least 6 hours apart after 20 weeks' gestation without the presence of protein in the urine

Risk factors

- Obesity, Age- under 20 or over 40 years old
- Pre-existing hypertension
- Past history of diabetes mellitus, hypertension (particularly gestational hypertension) and renal disease, having donated kidney.
- Family history of pre-eclampsia
- Multiple gestation (twins or triplets, etc.)
- Placental abnormalities: Hyperplacentalosis, placental ischemia.
- Thrombophilias (anti-phospholipid syndrome, protein C/S deficiency, factor V Leiden deficiency)

Treatment.

Supportive Measures: control of edema (salt restriction in diet, leg rising during rest or sleep), treatment of associated conditions such as diabetes, renal disease thrombophilia etc.

Control of blood pressure: by antihypertensive

Antihypertensive

Labetalol:

Starting oral dose- 100 mg twice daily,

Maintenance dose- 200-400 mg twice daily.

Severely high blood pressure -upto 1.2 to 2.4 g daily

Intravenous dose - 20 mg injected over 2 minutes.

Additional injections -40 or 80 mg every 10 minutes up to 300 mg.

Infusion- 500mg in 250ml N S @ 8-10 d/min.

Methyldopa:

250 mg bid up to 2000mg/day

Hydralazine:

I/V bolus 5-10mg every 20 minutes upto maximum dose of 30mg

Infusion- 20mg in 200ml N S @ 8-10 d/min

Calcium channel blocker (if no other choice)

Nifedipine- 10-20mg tds

Premature Rupture of Membrane (PROM)

Rupture of fetal membrane before onset of labour

Dx by symptom & sign (per speculum examination must be done)

Hospitalization & complete bed rest

Assessment (per speculum examination to confirm PROM & P/V exam for labour progress- if patient is in labour) and exclude **risk factors** - amnionitis, placental abruption, fetal distress, cord prolapse

Expectant management

- Sterile vulvul pad,
- Broad spectrum antibiotics
- Tocolytic agent-Magsulf / Beta-agonist
- Dexamithasone 6mg- I/M 12hrly for 4 doses(if <34 weeks)

Investigation:

CBC, random blood sugar, CRP, High vaginal swab for C/S, Urine R/E & C/S, Ultrasonography of pregnancy profile with biophysical profile & colour doppler if needed

risk factors - absent

risk factors -present

pregnancy <34 weeks

pregnancy ≥37 weeks

Expectant management to continue for fetal lung maturity.

serial evaluation to consider delivery at 34 weeks if possible

pregnancy ≥34 weeks and <37 weeks

Wait for spontaneous onset of labour for 24-48 hours

Fails

induction of labour or cesarean section for obstetric cause

Immediate delivery

Wait for spontaneous onset of labour for 24 hrs

Fails

Cesarean section with NICU facility

Transfer the patient with "fetus in utero" to a center equipped with NICU if fetal distress occurs

Puerperal Pyrexia

Causes of Puerperal Pyrexia with features:

Puerperal Sepsis	Pelvic Abscess	Generalized Peritonitis	Breast Abscess	UTI	RTI	Wound Infection
• Lower Abd. Pain • Foul Smelling Lochial Discharge • Tender Uterus	• Lower Abd. Pain • Abd. Distension • Vomiting • Diarrhea • Tender Uterus • Swelling in Adnexa/ POD	• Abd. Pain • Vomiting • Abd. Tenderness & rigidity • Abd. Distension • Absent Bowel Sound	• Breast Pain • Firm, Enlarged, Tender Breast • Fluctuant Swelling in Breast	• Dysuria • ↑ Urinary Frequency & Urgency • Tender Supra Pubic Region • Tender Renal Angle	• Productive Cough • SOB • Chest Pain • Creeps /Ronchi in Lung	• Discharge from wound site • Pain at/ around wound site

Diagnosis: Fever with features of SIRS (Systemic Inflammatory Response Syndrome) within 6 weeks after delivery: **excluding 1st 24 hours within 1st 10 days**

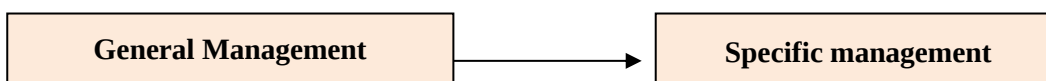
Fever with **any** 2 of the following criteria:

- Respiratory Rate >20/min
- Heart rate >90/min
- Temp > 100.4°F or <96.8°F
- WBC count >12,000/mm³ or <4,000/mm³

Assessment of cause by detailed history, clinical examination and investigation

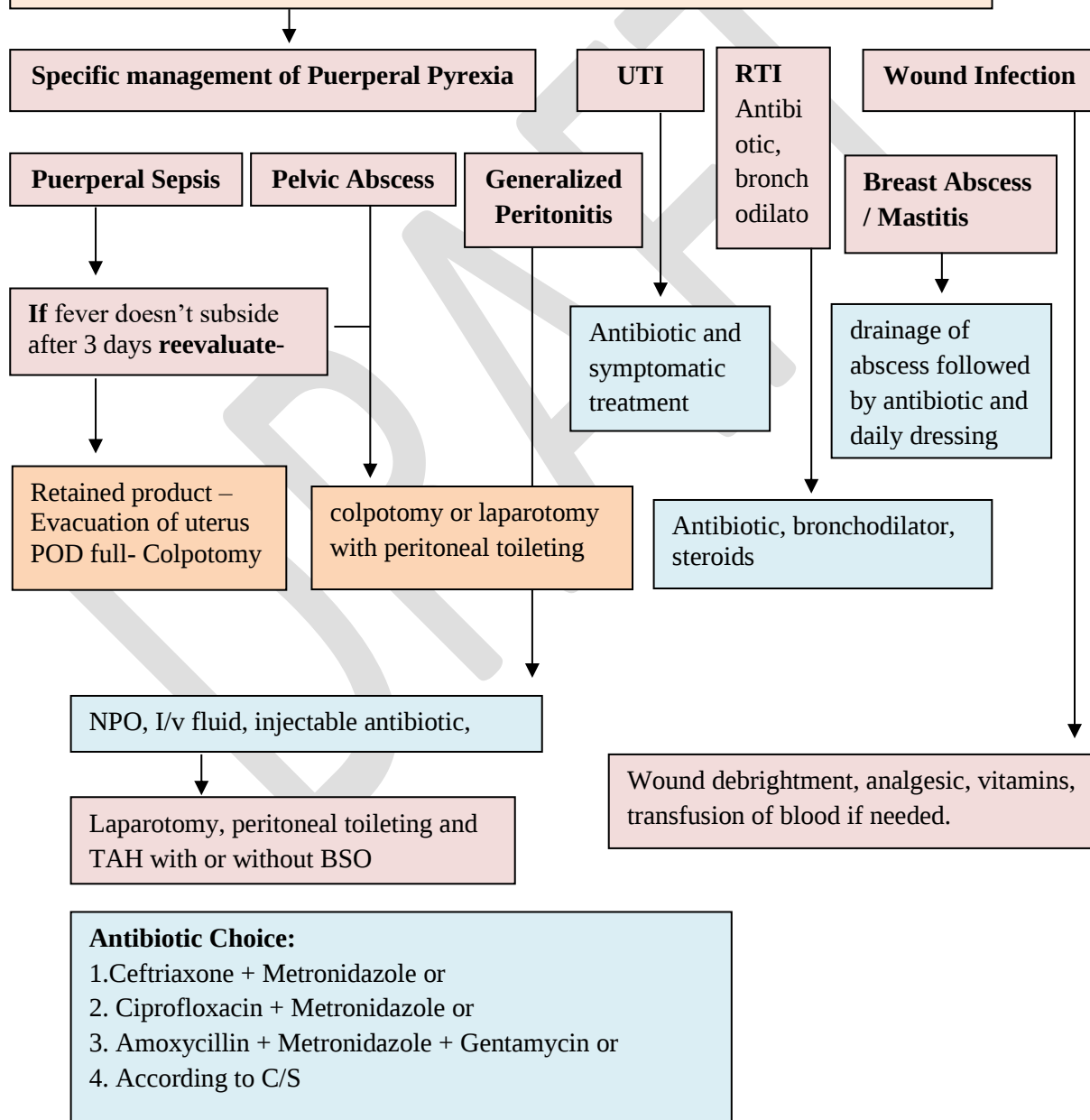
Investigations:

- CBC, Blood grouping & Rh typing
- Blood sugar (2 hours post-prandial)
- S. Creatinine, S. Electrolytes,
- Blood culture, HVS, wound swab for C/S
- Urine R/E, C/S
- USG whole abdomen



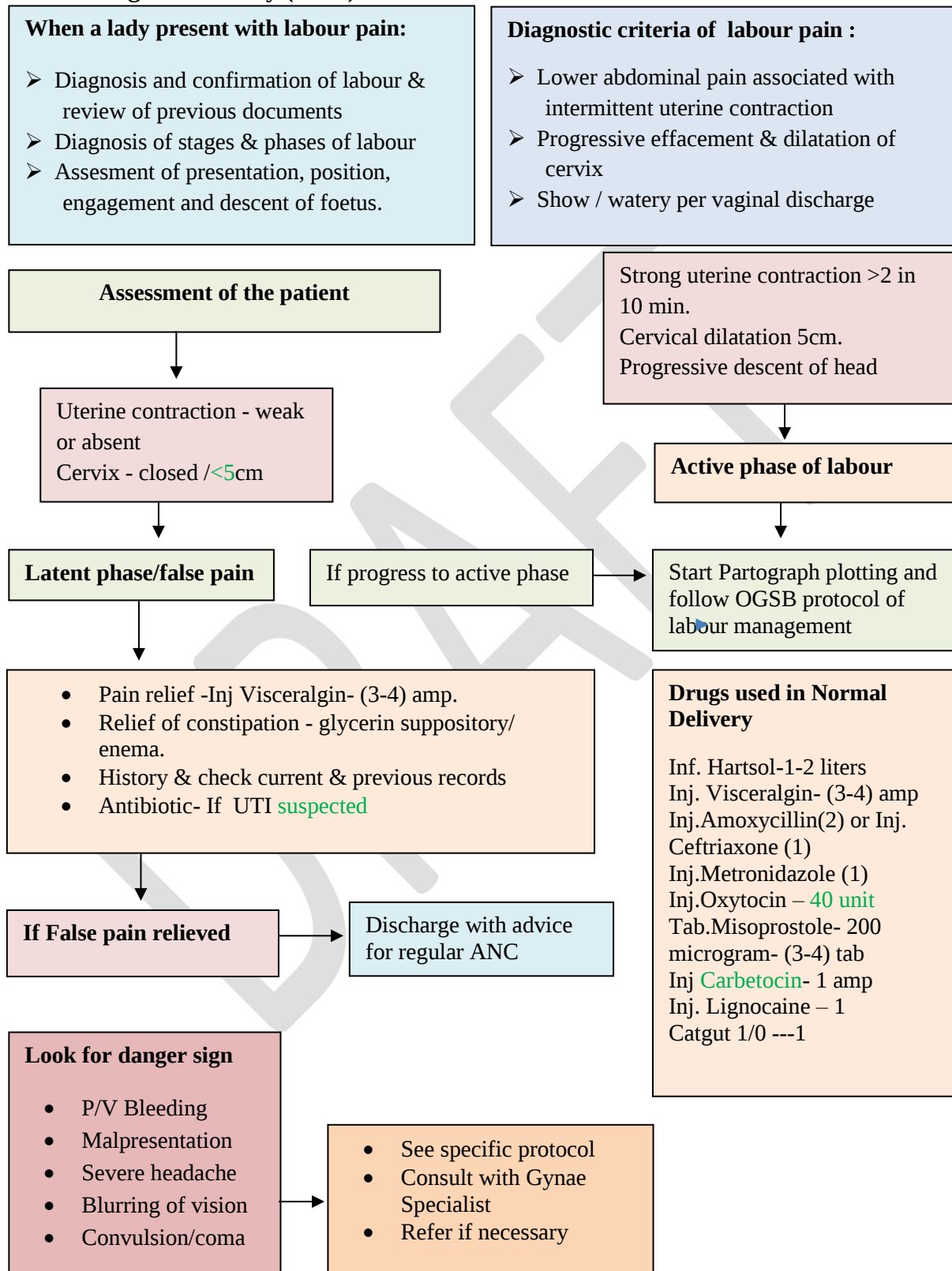
General Management of Puerperal Pyrexia

- Reassurance & Counselling
- I/V fluid , maintenance of nutrition
- Anti-spasmodic, anti-pyretic and cold sponging
- Broad spectrum injectable Antibiotic
- Catheterization if needed & strict fluid balance
- Monitoring: pulse, BP, temp, respiration, I/O chart
- Analgesic: NSAIDS



Vaginal Delivery

Normal Vaginal Delivery (NVD)



Assisted Vaginal Delivery: Vacuum delivery

Indication :

- 1.To cut short 2nd stage of labour **if it is** prolonged/maternal exhaustion.
2. Foetal distress/ a non-reassuring fetal heart rate tracing,
- 3.Maternal heart disease & Severe anaemia when vaginal delivery is safer than c/s

Contraindication:

- Premature baby
- Non-Vertex presentation
- Increased risk of mother to child transmission **of infection** e.g, HIV, HSV etc.
- Intra uterine foetal death.

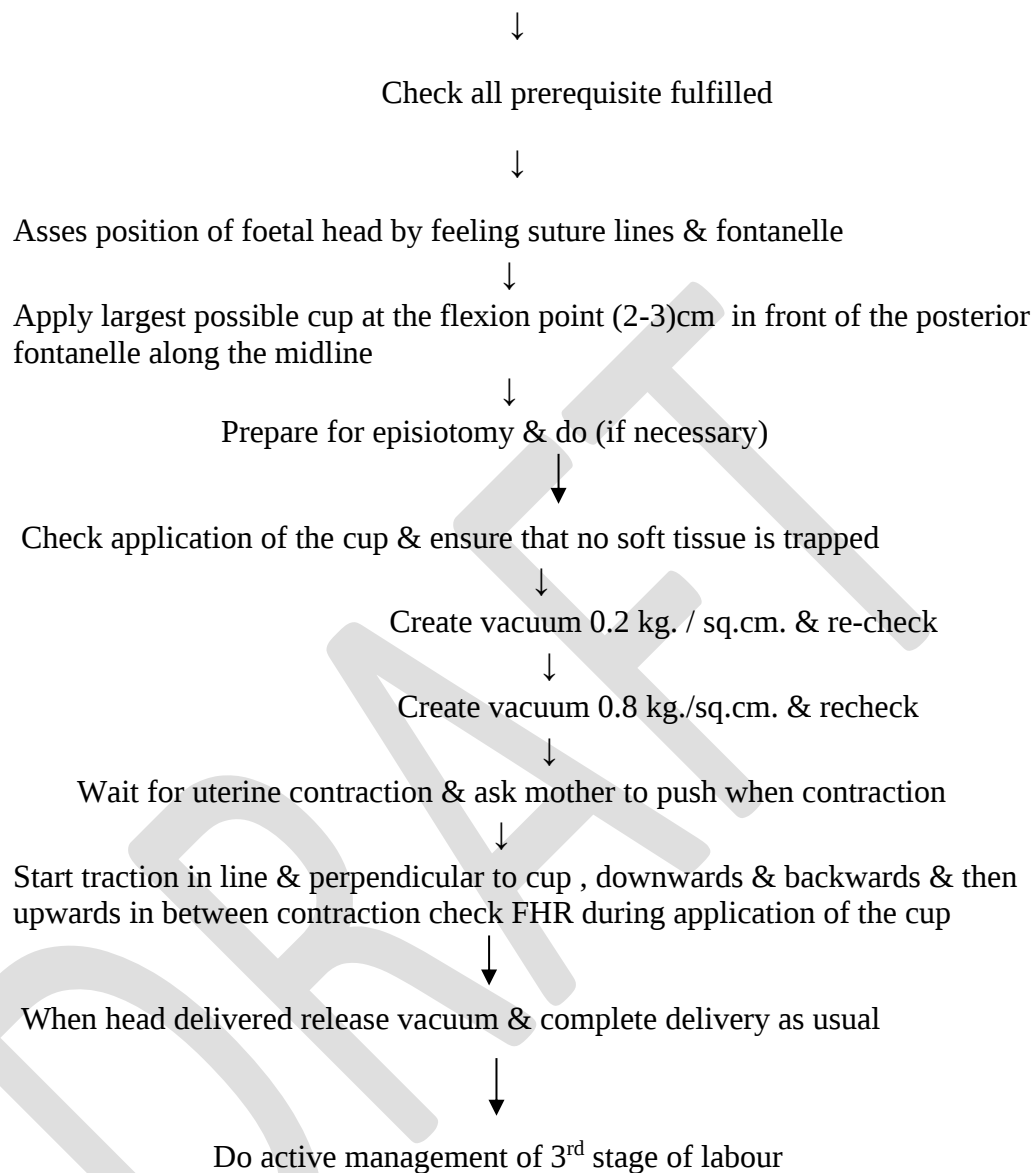
Prerequisite:

- Must be a clear-cut indication
- Term pregnancy
- Presentation must be vertex
- Cervix must be fully dilated (small rim of cx if head is small **(may be allowed)**)
- Foetal head must not be more than 1/5th palpable abdominally
- Urinary bladder must be empty, if retain catheter ballon must be deflated
- Foetal membrane must be ruptured
- Mother must be cooperative & conscious
- No CPD.

Drugs & materials Required:

I/ V fluid -1 litre (Hartsol)
2% Lignocaine—(1)
Inj.Pethidine(1),Inj.vergon (1)
Inj.ceftriaxone- 1gm stat
Inj. Omeprazole-1
Cap. Amoxycillin(500mg)- 21 cap
Tab.Metronidazole(400mg)– 21 tab
Tab. NSAID— ketorolac 10mg-21 tab
Cap Omeprazole—(bd for 7 days)-14
Atraumatic Vicryl 1-0/2-0 (round body) (1) (if Episiotomy given)
Clofenac suppository-1
Syringe (5cc)—5
Sterile gloves- 3 pairs
Plain rubber catheter/ folley's catheter with urobag-1
Betadine solution -100ml
Cord clamp-1

Procedure: Patient is in 2nd stage of labour



Post procedure:

- Dispose all the wastes **instruments**
- Wash hands & inform the mother
- Newborn resuscitation if needed
- Documentation of the procedure.

Forceps Delivery

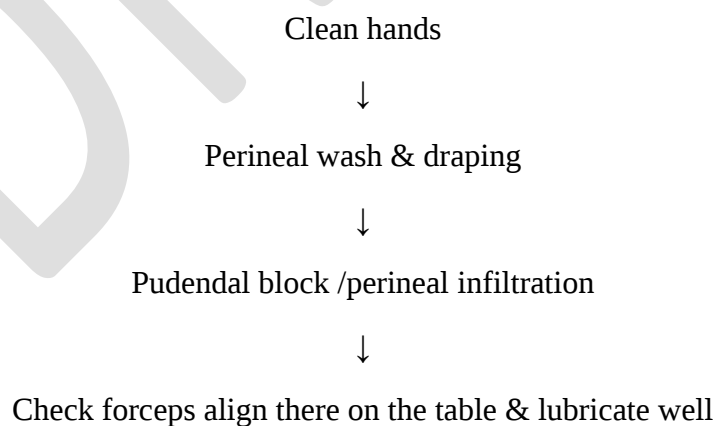
Indication:

- Premature baby.
- After coming head of breech
- As Vectis for high head in C/S
- Cord prolapsed in 2nd stage of labour
- Assisted vaginal delivery when mother is HIV + ve.
- To cut short the 2nd stage of labour

Pre-requisite:

- Cervix must be fully dilated
- Presentation must be suitable
- Bladder must be empty
- Foetal membrane must be ruptured

Pre procedure:



Procedure:

Insert two fingers of the right hand in the vagina & slide in left blade



Repeat on the other side, depress handle & lock forceps



Apply traction downwards & backwards



Check FHR & application of forceps

Give episiotomy if needed & complete delivery of baby as usual

Manage 3rd stage of labour by active management.

Failed vacuum/ Forcep :

- Procedure lasted for upto 20 minutes without delivery of the baby
- Significant descent does not occurred in three pulls
- Cup detaches twice



Stop the procedure and do C/S

Drugs & materials Required in Foceps delivery :

- IV fluid -1 litre (Hartsol), Inj.Pethidine(1),Inj.vergon (1)
- 2% Lignocaine—(1), Clofenac suppository-1
- Inj.ceftriaxone- 1gm(1),Inj. Omeprazole-1
- Cap. Amoxycillin(500mg)- 21 caps, Cap Omeprazole—(bd for 7 days)-14
- Tab.Metronidazole(400mg)– 21 tab, Tab. NSAID—tab. ketorolac 10mg-21
- Atraumatic Vicryl 1-0/2-0 (round body) (1) (if Episiotomy needed)
- Syringe (5cc)—5, Sterile gloves- 3 pairs
- Plain rubber catheter/ folley's catheter with urobag-1
- Betadine solution -100ml, Cord clamp-1

Abnormal Uterine Bleeding (AUB)

Definition: AUB is bleeding from uterine corpus that is abnormal in volume, regularity and /or timing and has present for the majority of the past 6 months (FIGO).

AUB diagnosed by History, Execution

- Spotting between periods
- P/V bleeding for longer days than normal
- Heavier/Lighter than normal period
- P/V bleeding after menopause
- Unusual amenorrhea
- Anemia may be present
- Per abdominal, per-speculum & per vaginal exam-should be done properly
- Exclusion of cervical pathology
- Pregnancy & pregnancy related complication should be extruded

Diagnosis conferenced by investigation

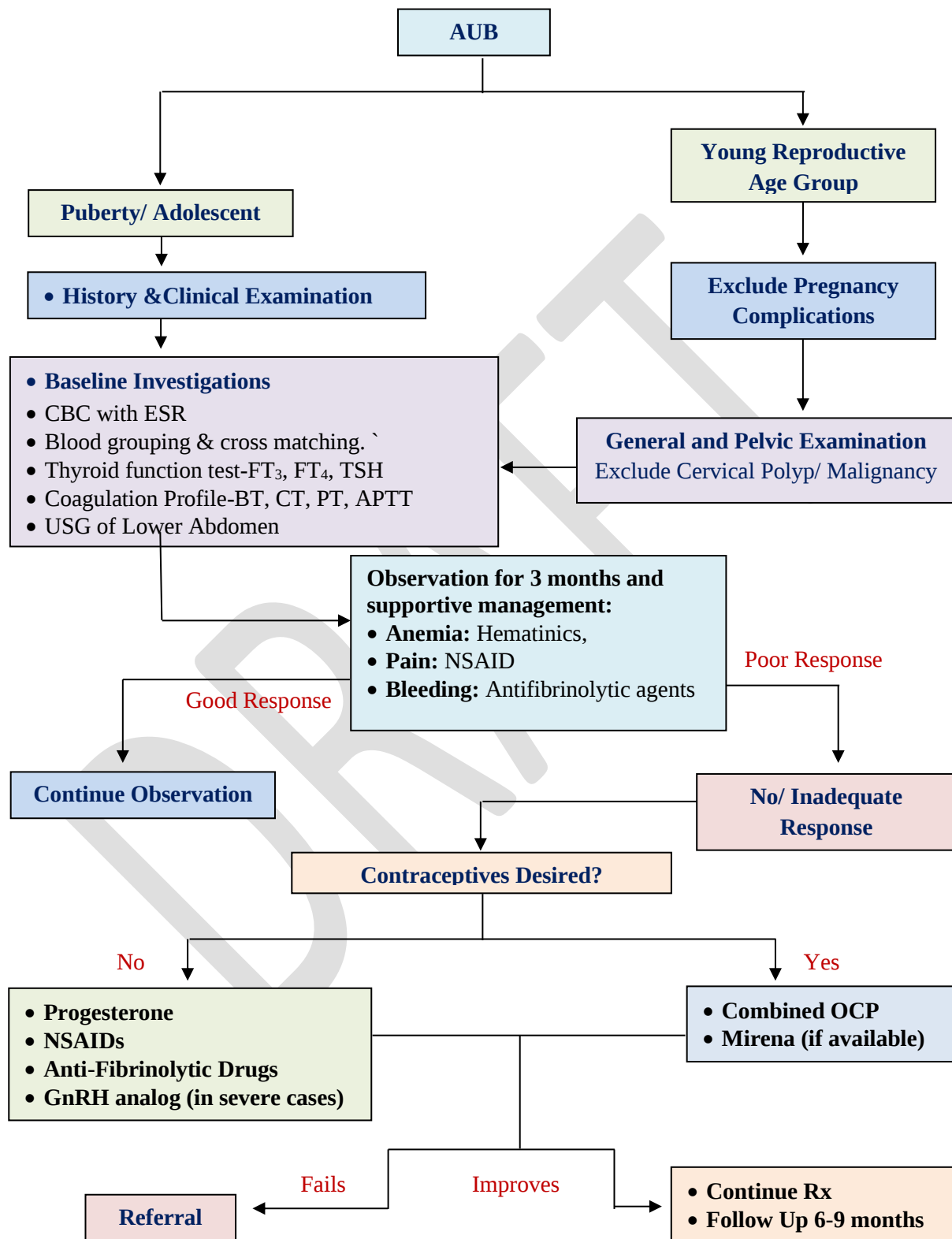
- USG of lower abdomen (L/A)
- TVS (if needed)
- Coagulation profile
- Hormone assay:-FSH, LH, prolactin ,TSH
- Pap's smear
- Histopathology of biopsy material

Management – According to cause

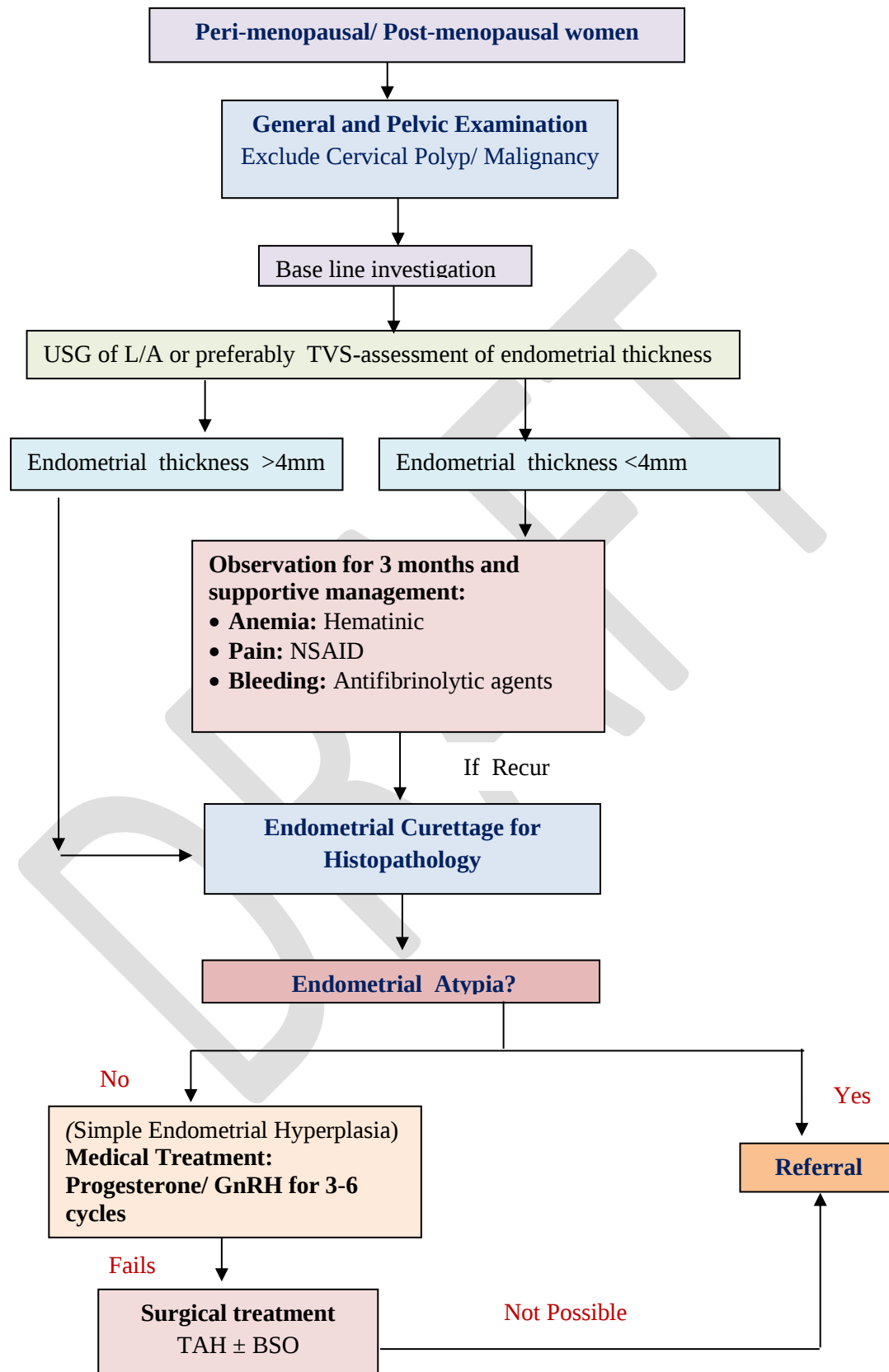
Classify as PALM-COEIN :

- AUB-A-Adenomyosis
- AUB-L-Leiomyoma
- AUB-M- Malignancy & hyperplasia
- AUB-C-Coagulopathy
- AUB-O-Ovulatory dysfunction
- AUB-E- Endometrial dysfunction
- AUB-I- Iatrogenic
- AUB-N- Not otherwise classified

Management – According to age groups



Management of AUB (Contd.)



Drugs and Materials needed in AUB

Hormonal drugs

- Progesterone-.Norethisterone/Dydrogesterone- 5- 10mg tds for (1-3) cycles
- OCP- combined pill for 3 cycles.
- GnRH analog- Inj.Luporin– one inj monthly for 6 months
- Tab. Thyroxine 50 microgram– if hypothyroidism, dose – according to hormone level

NSAID:

Mefenemic acid-(250-500) mg bd for 5days
or
Ketorolac 10mg tds for 5days
or
Naproxen 500mg bd for 5 days

Antifibrinolytic agents:

Inj. Tranexamic acid – 500mg tds for 24hrs
(If severe bleeding)
Cap.Tranexamic acid- 500mg tds for 2-3days

Hematinics:

- Inj. Feric Carboxymaltose 500mg – weekly for 2-3 weeks- If Hb level < 9gm or iron absorption is disturbed. Or;
- Oral Iron -polymaltose with folic acid and zinc with/without vit B complex –(1-2)cap daily for 3month

Intraoperative Drugs

- I/V fluid - 3 liters
- Inj: Pethidine -1
- Inj: Prochlorperzine
- Inj: Ceftriaxone -3
- Inj: Metronidazole- 3
- Inj: omiprazole -3
- Clofenac suppository-3

Drugs for Anesthesia(Spinal):

- Inj. Bupivacaine (heavy)- 1 amp
- Inj Ephedrine/Atropine- 4 amp
- Spinal Needle- 1

Suture materials& Others

- Vicryl -1-0 round body-2
- Vicryl -2-0 cutting body -1
- Catgut 1-0 round body -1
- I/V Canulla-2 (18 size)
- 5 cc disposable syringe-10
- Foley's catheter -1
- Urobag-1,
- Saline set 1,
- Blood transfusion set-1

Post operative Drugs-

- Cap. Cefixime 400mg/ Ciprofloxacin 500mg- bd for 7 days Tab: Metronidazole(400mg)- tds for 5days
- Tab ketorolac 10mg -tds for 5 days
- Cap Omeprazole 20mg bd for 7 days
- Tab. Calcium with vitamins- 1-tab bd for 1 month

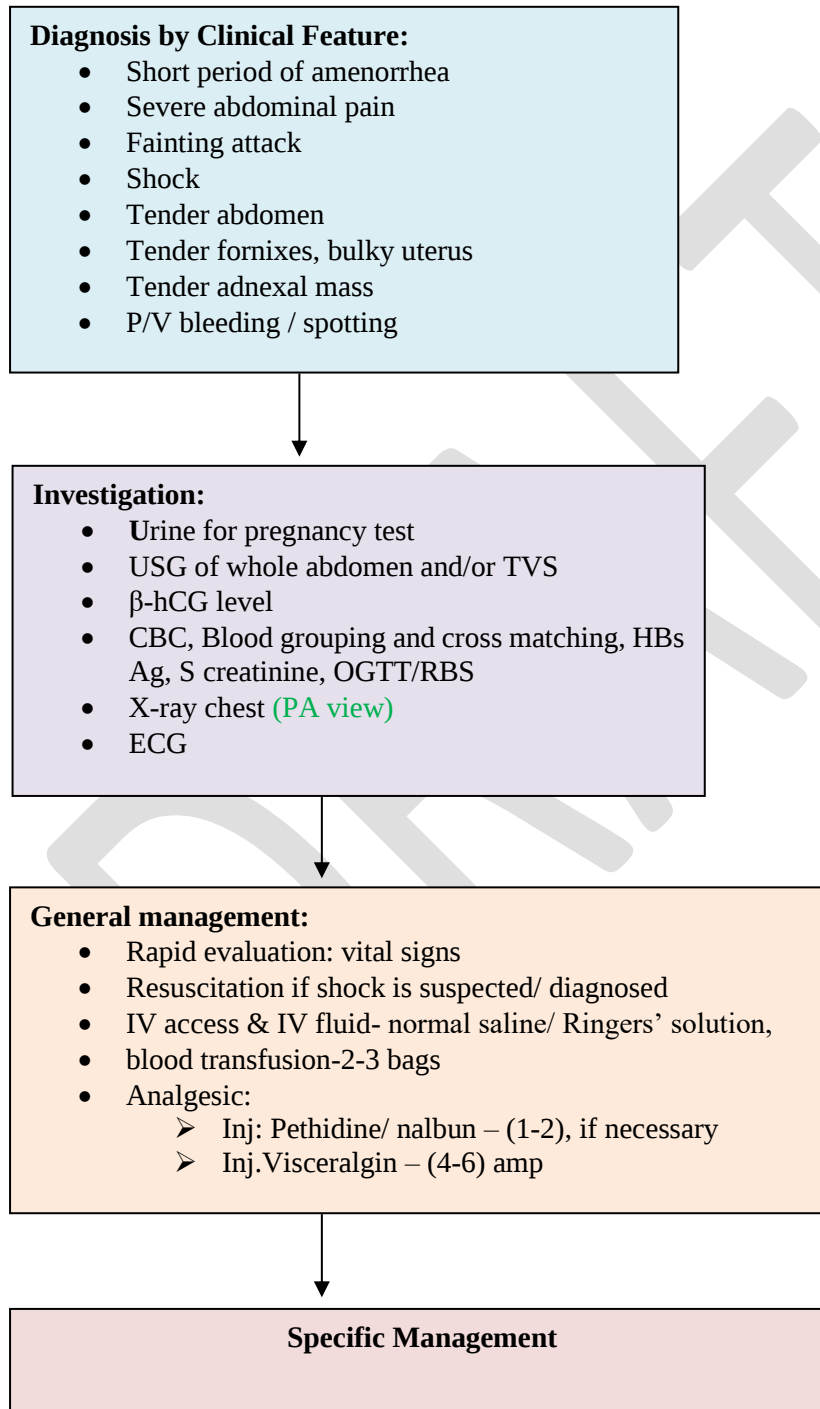
Advice

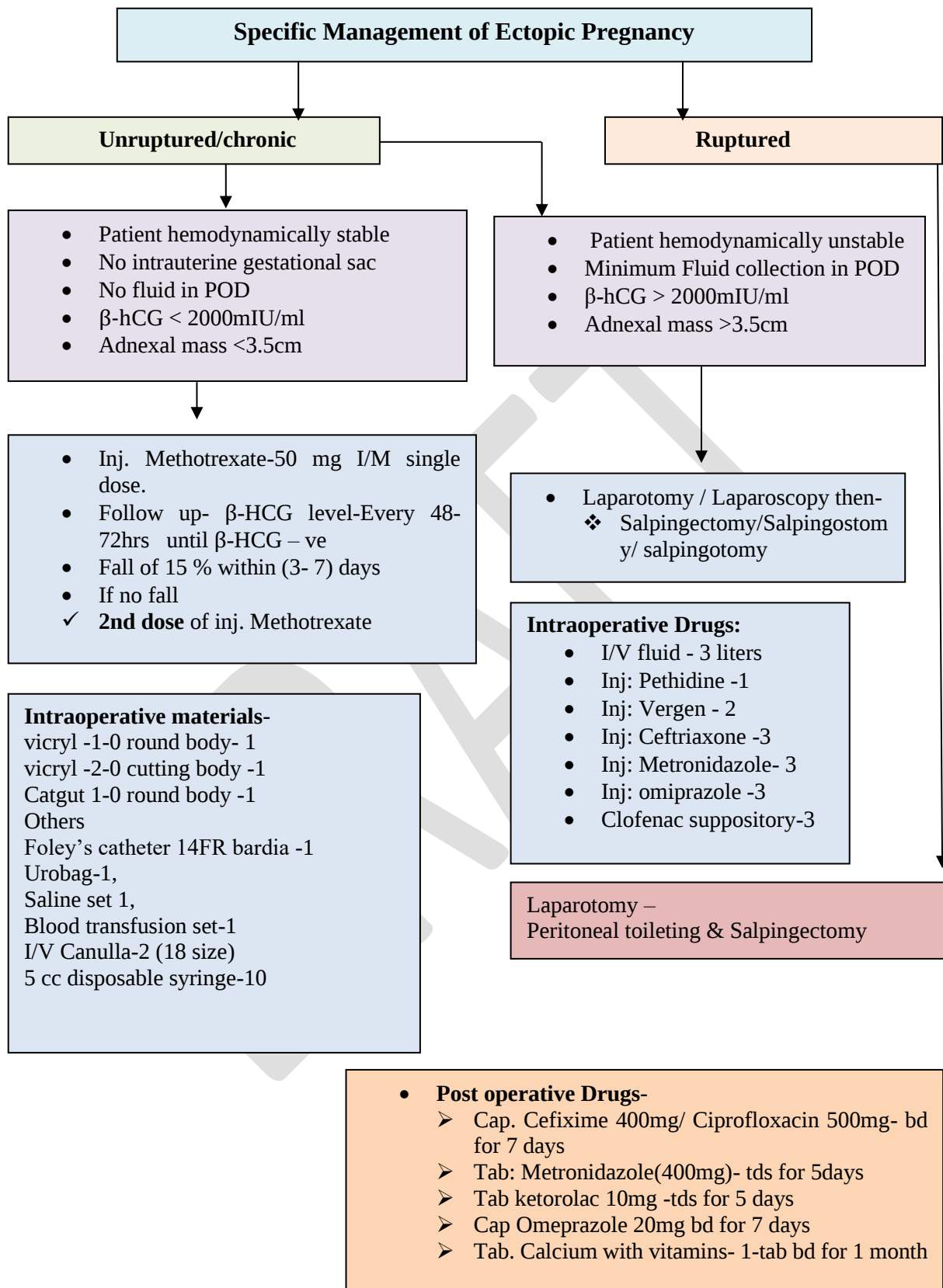
- Normal body movement except heavy lifting
- Abstinence for 6 weeks
- Follow up after 7days

Ectopic Pregnancy

Ectopic pregnancy means implantation of fertilized ovum in any places other than normal uterine cavity.

Common site- Fallopian tubes. Other sites- ovary, mesentery, abdomen etc.





Genital Prolapse

Genital prolapse is the descent of the pelvic organs secondary to the rupture or weakness of the pelvic floor support. It is usually associated anteriorly with prolapse of the urethra or bladder (urethrocele, cystocele) or posteriorly with rectal mucosa (rectocele) or both.

Diagnosis Clinically:

Symptoms:

- Something coming down P/V
- Usually postmenopausal & multipara
- Difficulty in micturition – Incomplete voiding, dysuria, frequency
- Difficulty in defecation – Pt may have to push the prolapsed area up for completion of defecation.
- Backache – Dragging sensation in back
- P/V reddish discharge – if decubitus ulcer

Signs: Per abdominal exam visually normal

Bimanual exam- prolapsed area can be seen on inspection and /or on cough reflex test, stage can be assessed also.

Categories / Classification

1st degree (I) – the uterus is in the upper half of the vagina. (only can be felt in bimanual exam)

2nd degree (II) – the uterus has descended nearly to the opening of the vagina. (+ve cough reflex test)

3rd degree (III) – the uterus protrudes out of the vagina.

Procidentia (IV) – the uterus is completely out of the vagina.

Operative treatment: Usually needed in 3rd degree (III) & Procidentia (IV) and also in 2nd degree (II) prolapse (in symptomatic cases)

Management:

- Pre-anesthetic checkup for fitness to surgery
- Surgery –vaginal hysterectomy with pelvic floor repair under spinal anesthesia (G/A rarely needed)

Pre-operative Investigation:

- Complete Blood count
- Blood sugar – post prandial/ OGTT
- S. creatinine
- HBs Ag
- Blood grouping & Rh typing
- Urine R/M/E
- X-ray Chest PA view
- USG of lower abdomen
- ECG
- Echocardiography – If needed
- VIA/pap's smear test

Intraoperative Drugs

- I/V fluid - 3 liters (Hartsol , DA, DNS)
- Inj: Pethidine -1
- Inj: Prochlorperazine - 2
- Inj: Ceftriaxone (1 gm)-3
- Inj: Metronidazole (500 mg)- 3
- Inj: omeprazole -3
- Clofenac suppository-3

Suture materials- & Others

- Vicryl -1-0 round body-(3)
- Catgut 1-0 round body -1
- Vicryl 1/0 cutting body -1
- Foley's catheter 14FR bardia -1
- Urobag-1,
- Saline set 1,
- Blood transfusion set-1
- I/V Canulla-2 (18 size)
- Disposable syringe (5cc)-10

Post-operative management

- Cap. Cefixime 400mg/ Ciprofloxacin 500mg- bd for 7 days
- Tab: Metronidazole(400mg)- tds for 5days
- Cap. Flucloxacilin 500mg qds (6hrly) for 7 days
- Tab ketorolac 10mg -tds for 5 days
- Cap Omeprazole 20mg bd for 7 days
- Continuous catheterization -3-5 days.
- Oral antibiotic after 24 hrs
- Patient can be discharged on 4th/5th P.O.D
- Tab. Calcium with vitamins- 1-tab bd for 1 month

Molar Pregnancy

Diagnosis by Clinical Feature:

- Vaginal bleeding during the first/second trimester
- Passage of fleshy mass / grape like structure P/V
- Pain in lower abdomen
- Signs of shock may present
- Severe nausea / vomiting- Hyperemesis gravidarum
- Uterus larger & softer than gestational period- in 50% of cases
- Fetal part is not palpable
- Early onset pre-eclampsia may occurs

Investigation:

- Complete Blood count, RBS
- X-ray Chest PA view- to exclude lung involvement
- USG of pregnancy profile:
 - Snow storm appearance
 - No foetus; (in partial mole-fetus with mole)
- Blood grouping & Rh typing
- Serum β -hCG - (β -hCG) /Urinary pregnancy test +ve in high dilution (may need to be repeated at several times)
- Histopathology of evacuated product (after suction evacuation)

General Management:

- Rapid evaluation of vital signs
- Resuscitation if shock is suspected / diagnosed
- IV access & IV fluid: normal saline / Ringers' solution- (1-2 litre)
- Blood transfusion – if necessary
- Analgesic: Inj: Pethidine -1 amp, if necessary
- Counselling: Pre-procedure / during procedure/ post procedure and assurance

Specific Management

Specific Management of Molar Pregnancy

- Start MVA / suction evacuation under **spinal** or general anesthesia
- When uterus becomes smaller - start Oxytocin infusion
- 20 IU in 1litre normal saline @60 drops/min
- Keep blood ready & transfuse if necessary
- Send **evacuated** product for histopathology
- **Strict follow up spatially with pulse oximeter**
- **Evacuated**

- Ensure immediate follow up- oxygen saturation to early diagnosis of embolism
- Contraception- Barrier methods until β -hCG (-) ve, then hormonal contraceptive for at least 1 yr

Follow up;

- History – Amenorrhea / irregular bleeding, cough (**warning signs**)
- Examination - size of uterus, adnexa (**to exclude luteal cyst**), metastasis in vulva, vagina cervix, urethra **etc**
- Serum beta HCG – weekly until 3 consecutive negative result then monthly for 1 yr
- X-ray chest if necessary (**heu**)

- If β HCG does not fall to normal / remains plateau / rises within or after 6 wks of evacuation refer the patient to tertiary center for suspected choriocarcinoma

Drugs used-

- IV access & IV fluid: normal saline / Ringers' solution – (1-2) liters
- Inj: Pethidine-1 amp
- Oxytocin infusion 20 IU in 1liter normal **saline for at least 6-8 hours**
- Drugs used in Anesthesia
- Antibiotic- inj Ciprofloxacin & inj Metronidazole for 24 hrs then oral therapy for 7 days

Ovarian Tumour

Definition: New growth in the ovaries are called ovarian tumor (benign/malignant).

Diagnosis by symptoms, Signs, Investigation

Symptoms:

- Sometimes asymptomatic
- Bloating /Vague
- Abdominal pain/discomfort
- Back pain, Fatigue, Heartburn
- Loss of appetite, Diarrhea, Indigestion
- Constipation, Nausea, Feeling full abdomen
- Frequency, urgency etc.

Investigations:

- CBC, RBS, HBsAg
- S Creatinine, Urine RE
- Blood group & Rh typing
- CA-125, (CA 19-9, B-HCG, alpha-
- Fetoprotein, LDH-when needed)
- USG of W/A- with colour doppler
- TVS may be needed
- Ascitic fluid- biochemical and serological
- X-Ray chest P/A view
- ECG
- CT scan of abdomen- if needed.

Signs:

General examination

- Anaemia, Cachexia (in advanced carcinoma)
- LN -Palpation of the supraclavicular, axillary, and inguinal lymph nodes- (palpable in metastasis)
- Pleural effusion- in lung metastasis

Per abdominal exam

- Increased abdominal girth and/or ascites
- Abdominal mass: usually palpable if >5cm

Benign-well-defined, smooth, mobile, non-tender,

Malignant-Irregular, nodular, not well defined, fixed, tender.

Per vaginal/ bimanual exam

Consistency, surface, mobility etc. should be evaluated to differentiate benign & malignant growth.

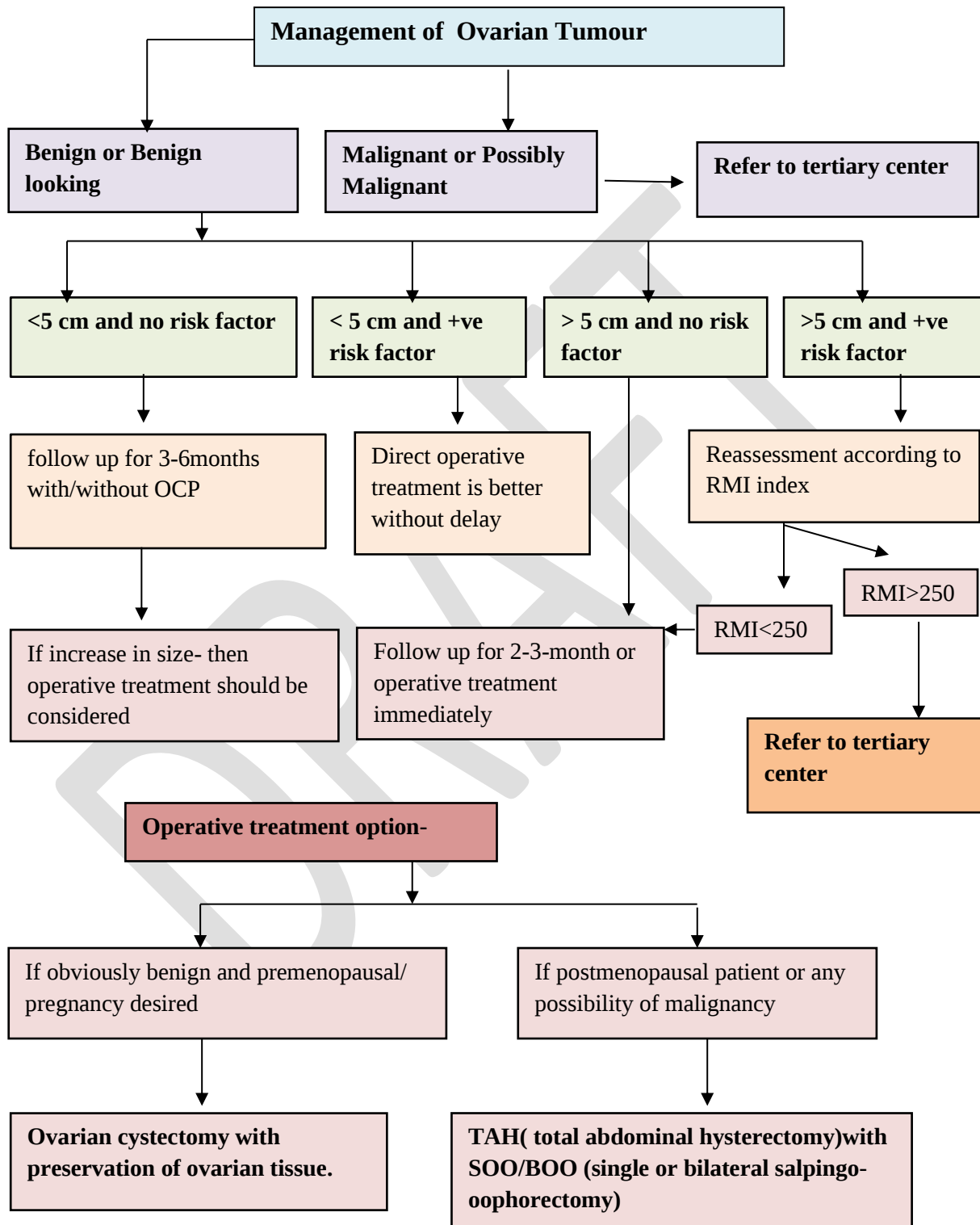
Risk factors

Nulliparity, HRT, Fertility medication
Family history of gut/ovarian/breast malignancy
Early menarche & late menopause, Obesity
Presence of *BRCA1* or *BRCA2* genes
Polycystic ovary syndrome and endometriosis
Caucasian are at a (30–40) % higher risk
Excess ingestion of red meat and processed meat
Excess use of talc, pesticides, and herbicides

Decrease risk:

Hormonal pill, tubal ligation, and breast feeding.
Lot of carotene, fiber, and vitamins & low fat
Higher caffeine- more than two cups of tea a day
Hysterectomy

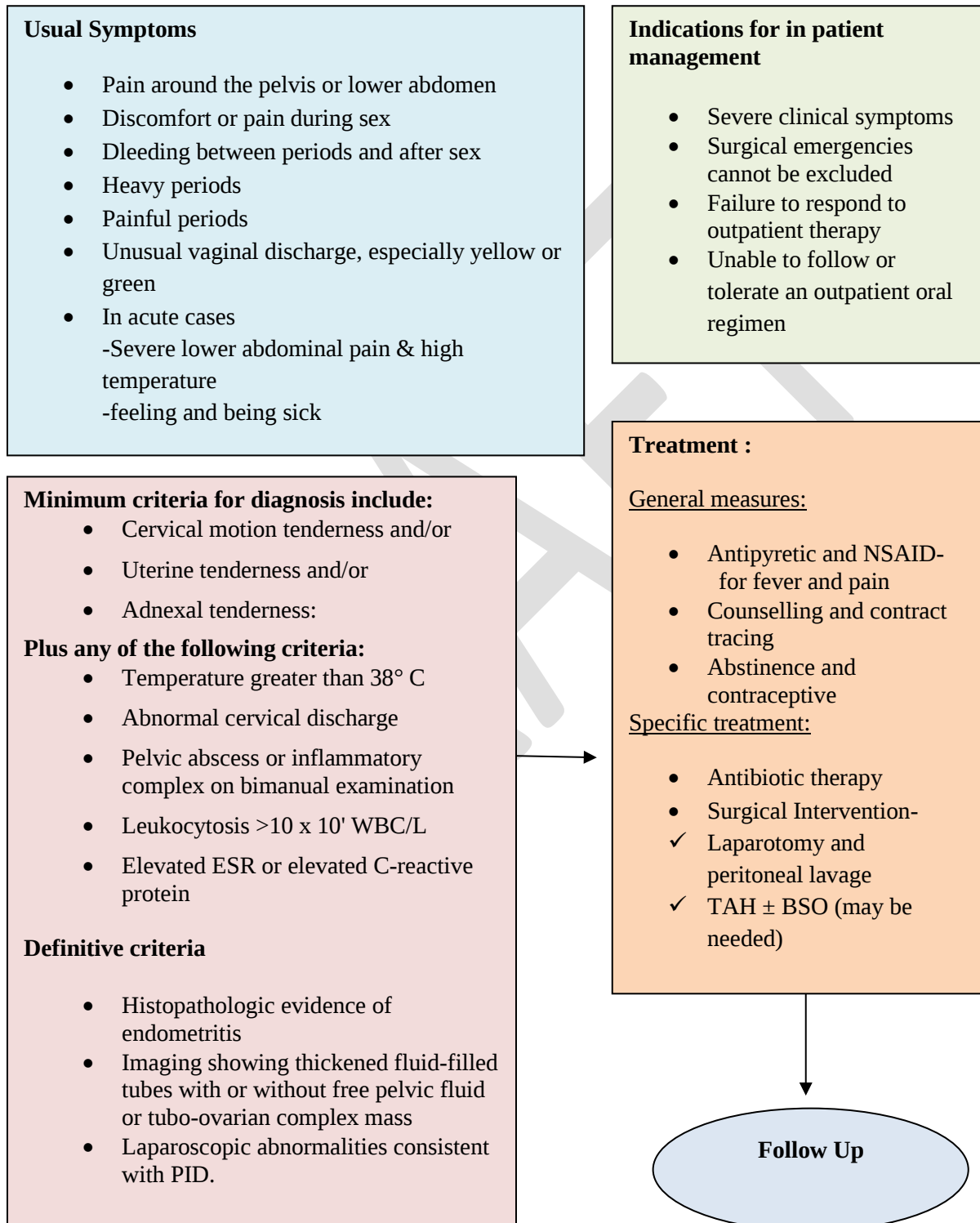
Management – Conservative/Surgical/ Referral



❖ RME=Risk of malignancy Index

Pelvic Inflammatory Diseases (PID)

- Infection ascending from the endocervix causing **endometritis, salpingitis, para metritis, oophoritis, tubo-ovarian abscess and/or pelvic peritonitis.**



Standard Antibiotic therapy

Ceftriaxone 500 mg IM as one dose plus
Doxycycline 100 mg orally twice a day for 14 days plus
Metronidazole 400 mg orally 12 hourly for 14 days

Metronidazole may be discontinued after 5 days in mild to moderate PID where the woman fails to tolerate it

Alternate therapy (limited evidence)

Ceftriaxone 500 mg IMI as one dose plus
Azithromycin 1 g weekly for 2 weeks plus
Metronidazole 400 mg orally 12 hourly for 14 days

Other Antibiotic Regime

1. Cefoxitinor /cefotetan (1 gm 12hrly)
plus doxycycline- 100mg bid for 14 days
2. Ceftriaxone or cefoxitin- single dose plus doxycycline for 14 days.
3. Ampicillin/sulbactam plus doxycycline for 14 days

Follow up

Close follow up is required at 72 hours or earlier if symptoms are failing to settle.

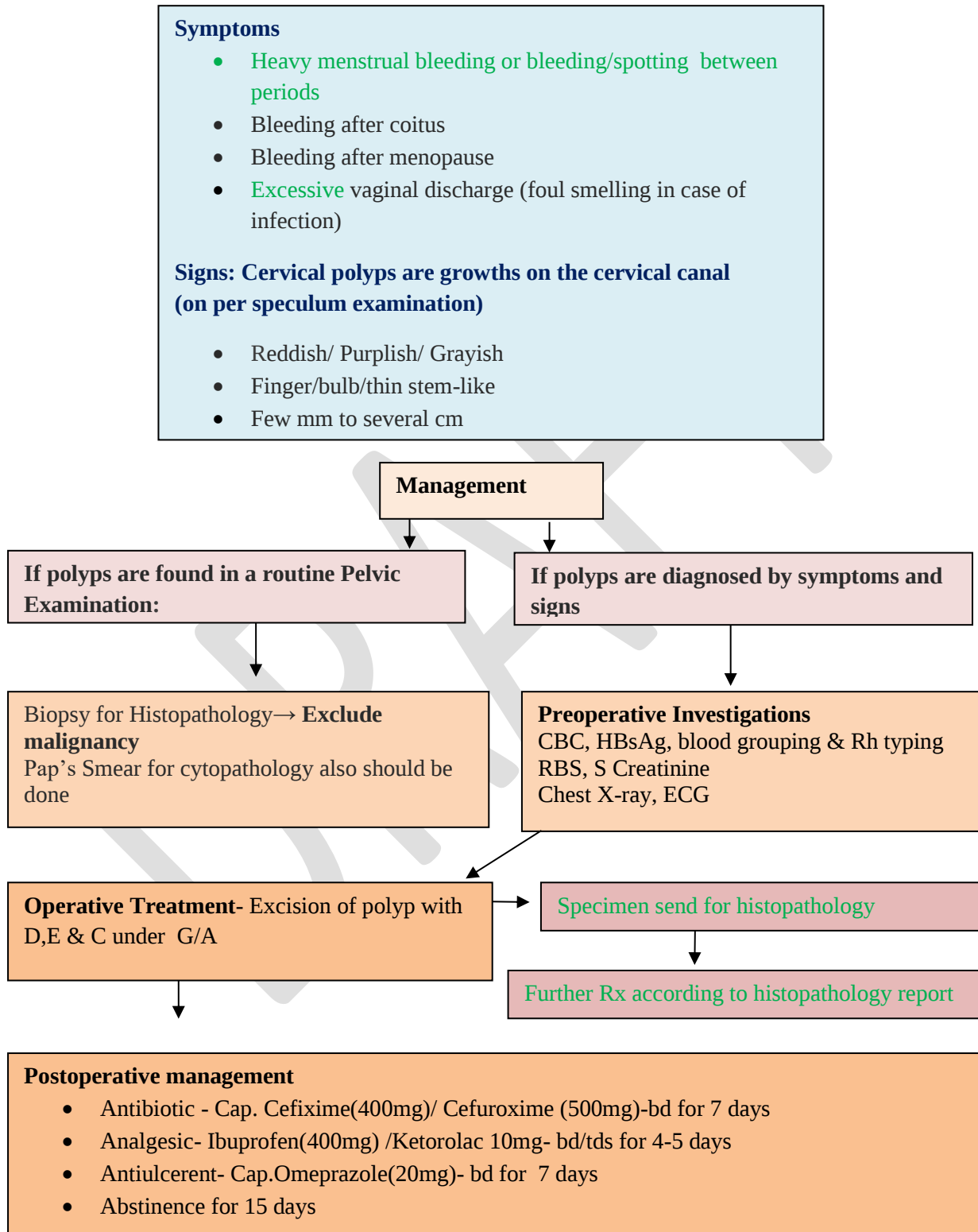
Review at 2 weeks to assess for response to treatment and the development of any recent complications (eg- tubo-ovarian abscess.)

Complications

- Infertility
- Chronic pelvic pain
- Increased incidence of ectopic pregnancy
- Increased risk of further episodes of PID
- Tubo-ovarian abscess and pelvic abscess.

Polyp of Female Genital Tract

Polyps are usually diagnosed in a routine pelvic examination or clinically by symptoms and signs



Septic Abortion

Abortion complicated with infection is called septic abortion

Diagnosis by history & examination

- History of amenorrhea
- H/O induced abortion / MR
- Vaginal bleeding or foul-smelling discharge
- Abdominal pain
- Fever
- Features of shock
 - Rapid pulse, low BP
 - Oliguria
 - Reduced level of consciousness

Local exam (Per-vaginal:)

- Enlarged uterus
- Foul smelling per vaginal discharge
- Cervical motion tenderness positive
- Full POD (pouch of Douglas)
- Tender pelvic mass **may be felt**

Features of peritonitis / Internal Hemorrhage / Intra-abdominal injury

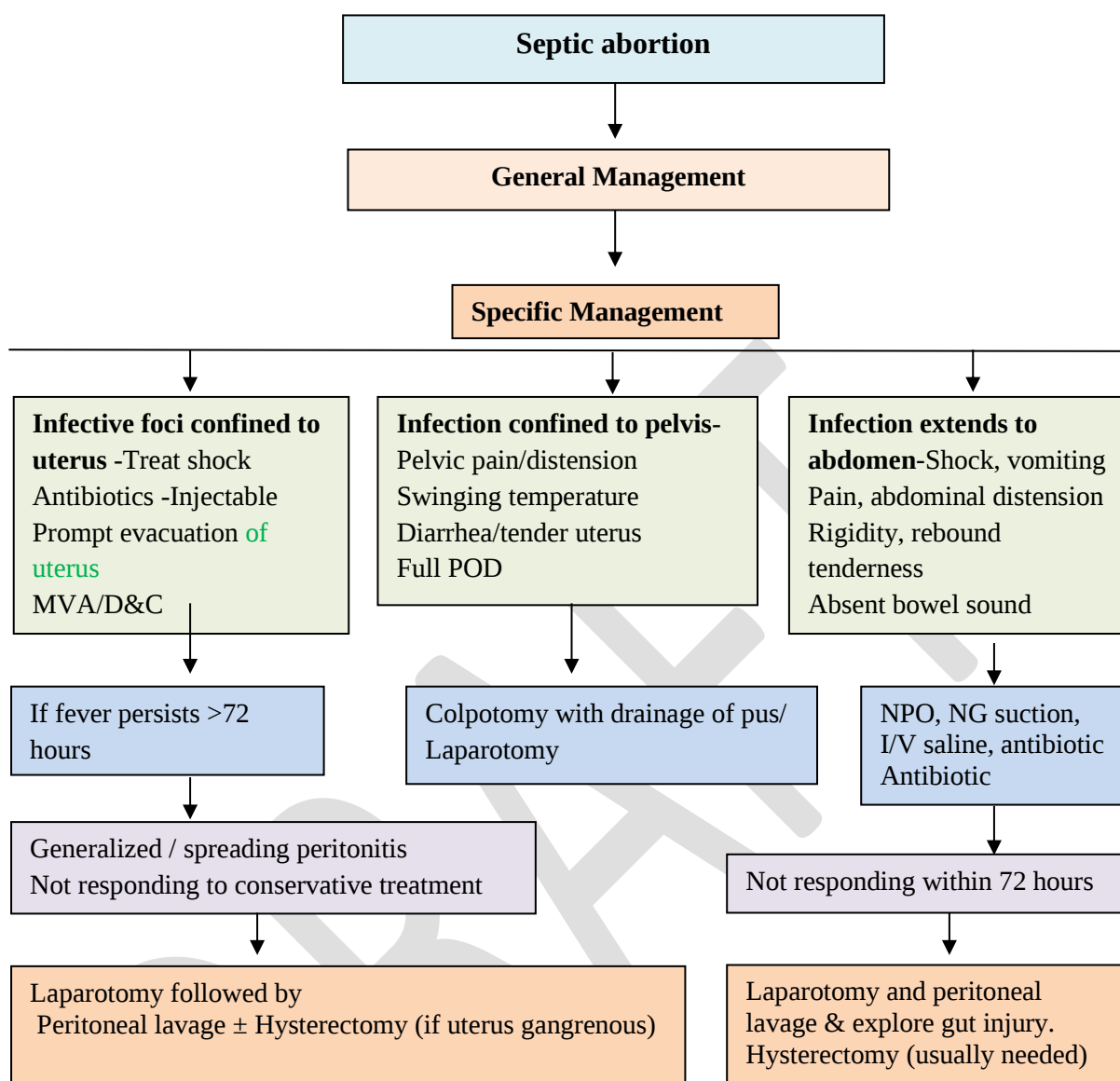
- Vomiting
- Temp high or sub normal
- Dehydration
- Raised pulse, low BP
- Abdominal distension
- Rebound tenderness
- Rigid abdomen
- Absent bowel sound

Investigation

- CBC, RBS, HBsAg
- Blood grouping & cross matching
- Urea, Electrolytes
- HVS/Pus/Urine/Blood C/S
- USG of whole abdomen
- X-ray abdomen - erect posture, as necessary

General Management

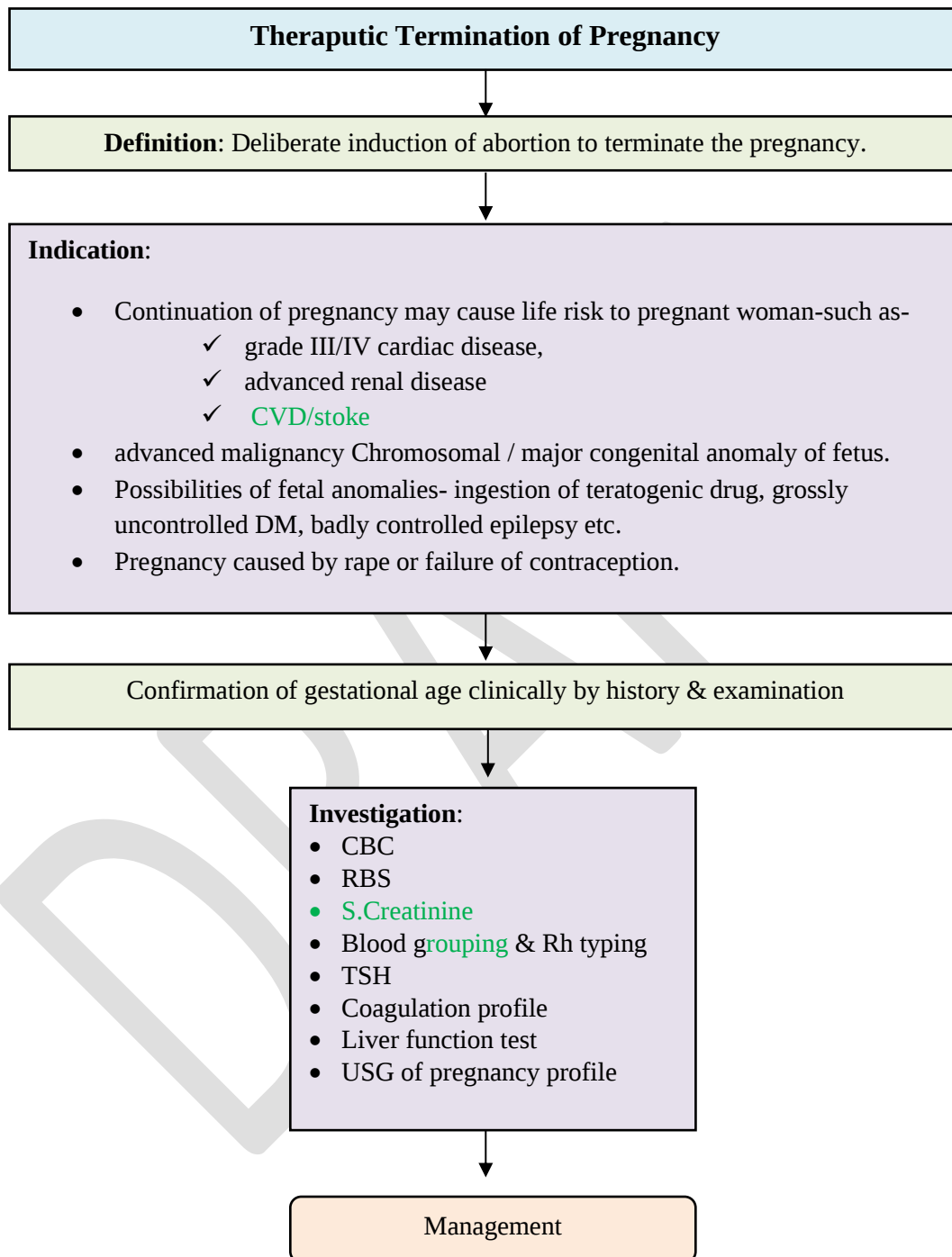
- Reassurance / confidentiality
- IV access, IV fluids-Normal saline / Ringer's lactate, Maintenance of nutrition
- Antibiotics: Parenteral, broad-spectrum combination of antibiotics **e.g.- triple antibiotic (amoxycillin, metronidazole, gentamycin) or, ceftriaxone +metronidazole**
- Pain relief: Inj: Pethidine
- Antipyretic and cold sponging: in high temperature
- Inj: tetanus toxoid I/M ±Tetanus Immunoglobulin I/M
- Catheterization
- Strict fluid balance, Maintain intake output chart
- Monitor: Temp, Pulse, BP, Respiration

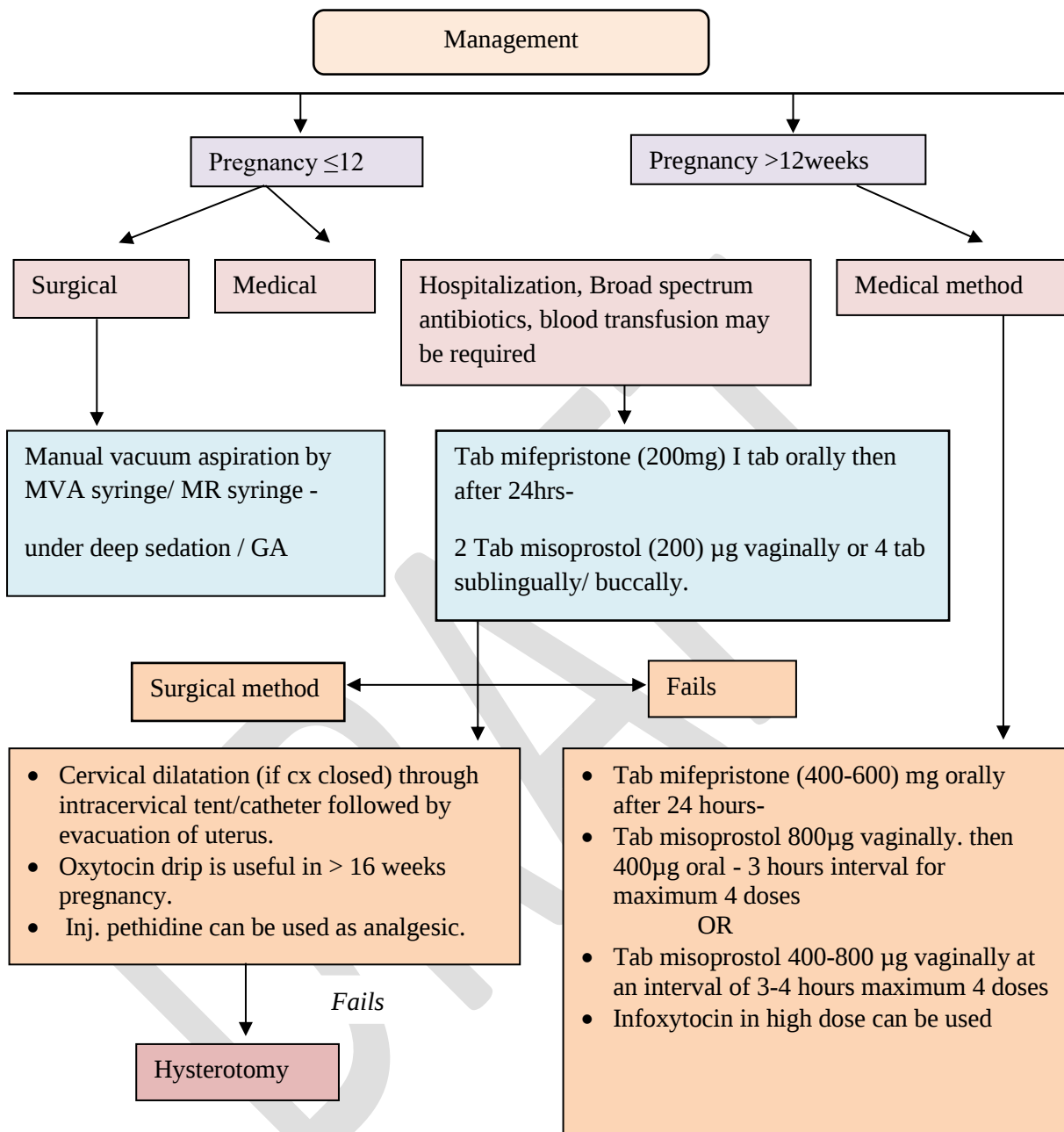


Drugs and others used in septic abortion

- I/V fluid eg Ringer lactate/ Normal saline- (2-3) liters
- Antibiotics - Immediate parenteral broad-spectrum combination antibiotics-
 - Inj. Ceftriaxone - 3/ Inj. Amikasin-3
 - Inj. Metronidazole-3
 - Inj. Gentamycin-3
- Inj: Pethidine-1
- Antipyreic and analgesic- Inj.Diclofen -3/Diclofen suppositories-3/ paracetamol suppositories-(3-4)
- Inj: Tetanus toxide 0.5 ml ± Tetanus Immunoglobulin
- Blood Transfusion- if necessary
- Saline set & Blood set, NG tube (if needed)
- I/V canula (1) Disposable syringe (5).
- Catheter & Urobag

Therapeutic Termination of Pregnancy





**** Note-** Surgical method can be the first option if patients desire

Uterine Fibroids (Leiomyoma)

Definition; Uterine Fibroid/ Leiomyomas are benign smooth muscle tumors of the uterus

Diagnosis by Symptom & Signs:

- Heavy Periods ± Pain / Heavy menstrual bleeding
- Urinary Frequency / Urgency (If large & push over the bladder base)
- Pain during coitus
- Sub fertility / Recurrent abortion
- Abdominal Mass- firm, mobile, midline lower abdominal mass with negative get below the swelling. (when large > 12 weeks size)
- Anemia (secondary to increased p/v bleeding)
- Sometime asymptomatic

Risk factors:

- Obesity
- Reproductive years
- Early menarche & late menopause
- Osteogenic hormone therapy
- ↑Intake of Red Meat
- Family history of Fibroids
- Differing pregnancy/ infertility

Adverse pregnancy outcomes:

- ❖ Miscarriage
- ❖ Threatened abortion
- ❖ Premature labor (if large tumor)
- ❖ Malpresentation
- ❖ IUGR
- ❖ Prolonged obstructed labour
- ❖ PPH

Investigations

For Diagnosis –

- USG of L/A
- TVS- sometimes needed when small fibroids or submucous type

For Management

- CBC, RBS/OGTT, HBs Ag
- S. creatinine
- Blood grouping & Rh typing
- Urine R/M/E
- X-ray Chest PA view
- ECG



Treatment

Doses of some important drugs

Ulipristal acetate- (5mg)

1 tab daily for 3 months (check SGPT & S.creatine before and after treatment)

Cabergoline (0.5mg)

one-tab weekly for 2-3 months

Danazol (200mg)

1-tab bd for 3-6 months

Aromatase inhibitor - tab Letrozole

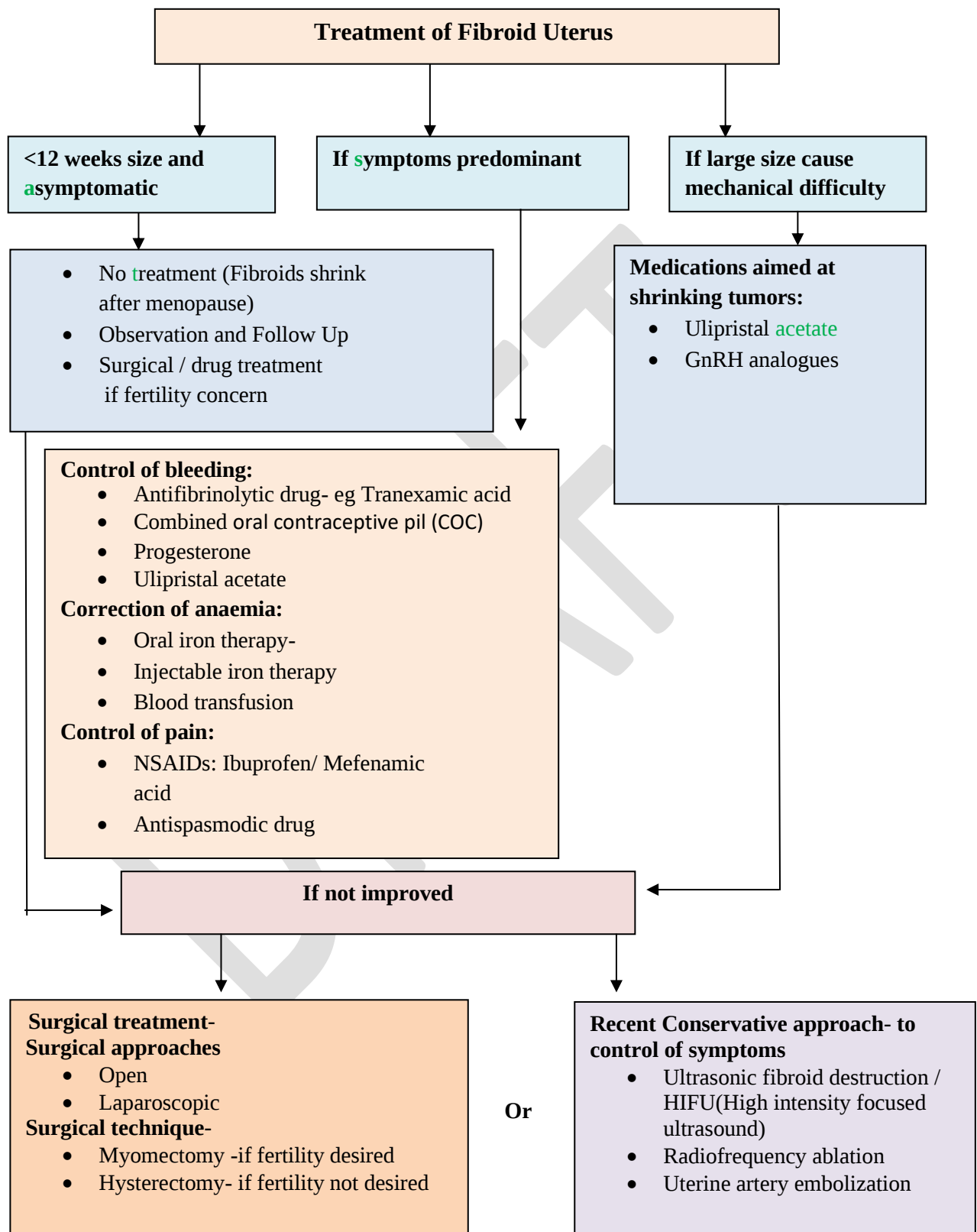
2.5mg/day for 3-6 months

GnRH analog- eg- Inj. Lucrin -3.75mg

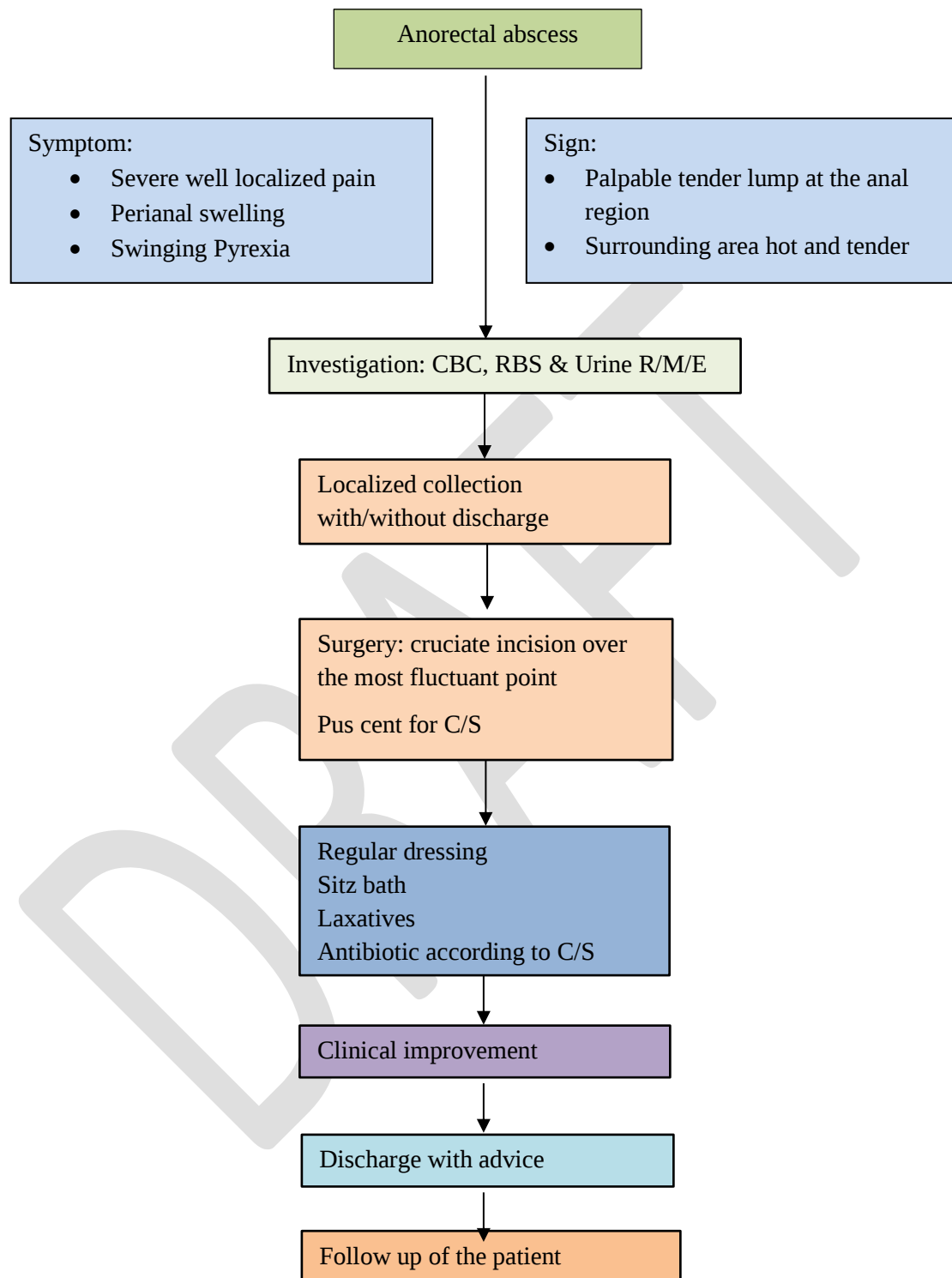
monthly for 6 month/ 11.25mg 3

monthly for 2 doses

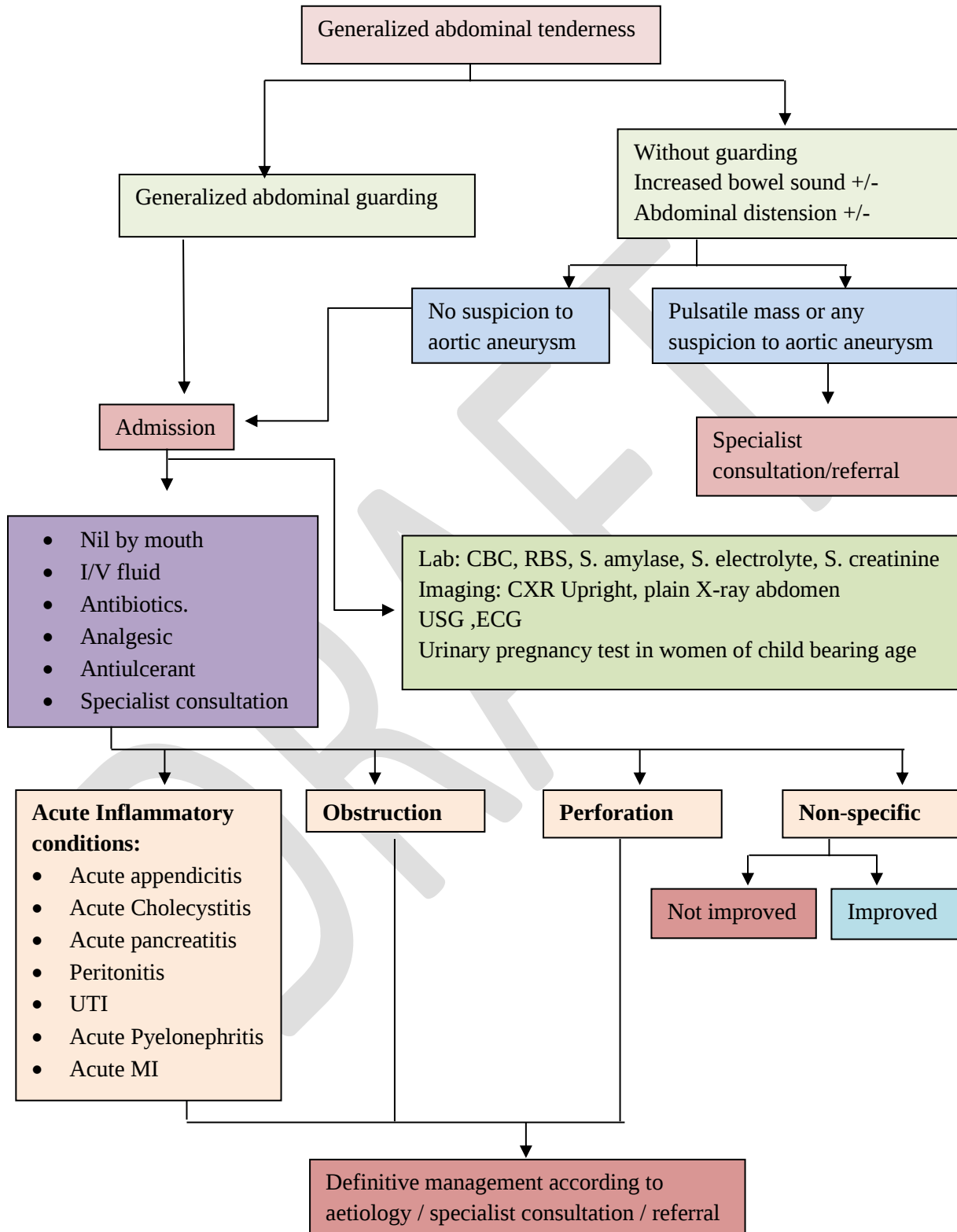
Combined oral contraceptive pill (COC)

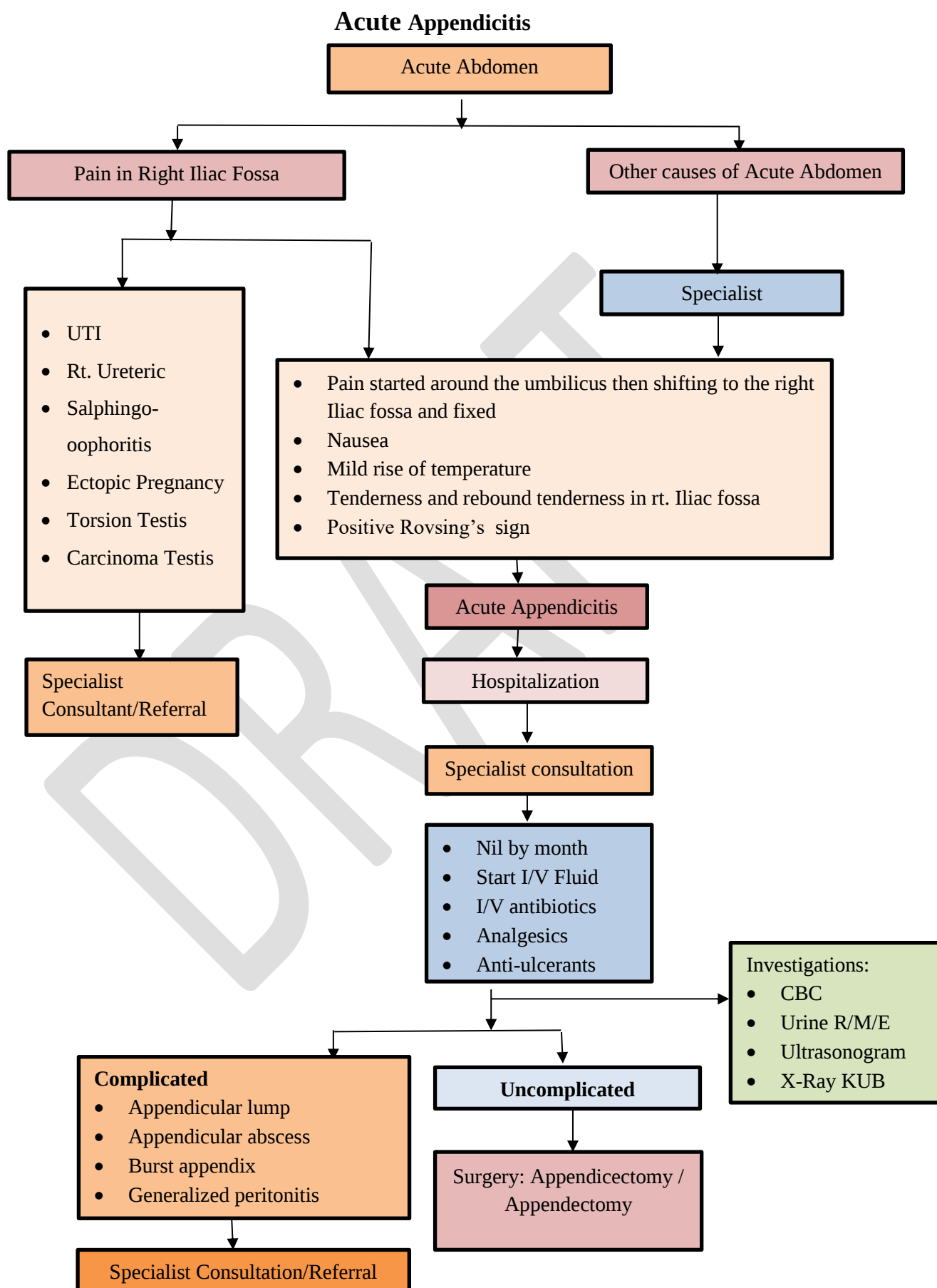


Abscess of Anorectal Region



Acute Abdomen





Appendicectomy

Surgical removal of vermiform appendix

Clinical features:

- Pain started around the umbilicus then shifting to the right iliac fossa and fixed there.
- Nausea rather than vomiting
- Mild rise of temperature
- Tenderness & rebound tenderness in right iliac fossa
- Positive Rovsing's Sign

Investigations:

- Complete blood count: neutrophilic leucocytosis (TC 11,000-18,000 per cmm, more than 18,000 per cmm likely other diagnosis or complicated).
- Urine RME: a few pus cells and no RBC are usual (more pus cell or presence of RBC is likely urological diagnosis).
- X-ray KUB: no radio opaque shadow along the kidney, ureter or urinary bladder region.
- USG of lower abdomen: Kidney, ureter and urinary bladder region normal. In case of female patient: ovary, fallopian tube or uterus is normal. A small collection in right iliac fossa or edematous appendix may be diagnostic.
- RBS and serum creatinine level if possible or required.

Management:

- Hospitalization
- Nil by mouth
- Start I/V fluid (Hartman's solution, 5% DNS or 5% DA) according to need of the patient by body weight or status of hydration
- I/V antibiotics (Ceftriaxone or Ciprofloxacin with Metronidazole) according to the body weight of patient
- Analgesics: injectable/ suppository (Diclofenac/Ketorolac/Tramadol HCL)
- Anti-ulcerant: injectable Omeprazole or Ranitidine if pain
- If diagnosis consistent with acute appendicitis:
 - Emergency appendicectomy through Grid Iron or Lanz incision under general or spinal anesthesia according to age of the patient after 6 hours nil by mouth

Post-operative treatment: Nil by mouth for 12-24 hours. IV fluid, antibiotics, analgesics and anti-ulcerant as mentioned before. Switch to oral therapy as early as possible. Patient may be discharge on 2nd or 3rd POD after check dressing.

If diagnosis otherwise:

Consult accordingly or refer to the hospital according to the protocol.

If complications:

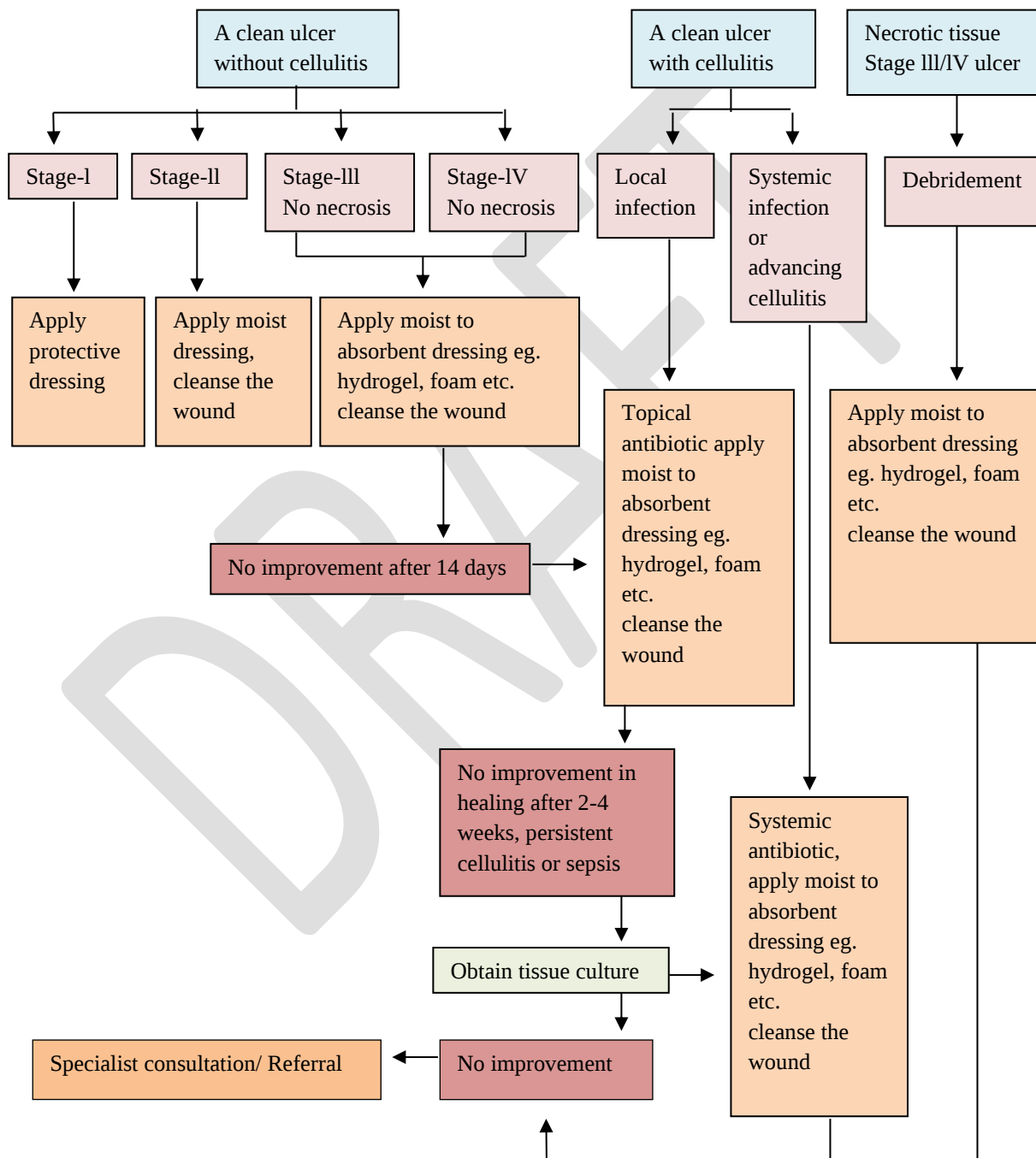
Generalized peritonitis, appendicular lump or abscess, previous H/O high fever or high fever, moderate or huge pelvic collection, H/O missed period in case of female (15-45 years of age), pregnancy or diagnostic dilemma-refer the patient to the hospital according to referral protocol with above mentioned treatment.

DRAFT

Bed Sore (Pressure Ulcer)

The Four Stages of Pressure Injuries

- Stage 1 Pressure Injury: Non-blanchable erythema of intact skin.
- Stage 2 Pressure Injury: Partial-thickness skin loss with exposed dermis.
- Stage 3 Pressure Injury: Full-thickness skin loss.
- Stage 4 Pressure Injury: Full-thickness skin and tissue loss.



Benign Lipomatous Neoplasm

Benign Lipomatous Neoplasm or Lipomas are the most common soft-tissue tumor. These are slowly growing, benign fatty tumors form soft, lobulated masses enclosed by a thin, fibrous capsule.

Clinical features

- Lipomas are small mobile soft swelling in undersurface of skin and subcutaneous tissue
- Usually not painful
- Remain same size for long period
- Sometimes very large

Physical Examination

- Typical appearance of lipoma is soft, well demarcated, smooth surfaced, lobulated swelling with slip sign
- Sometimes shows pseudofluctuation

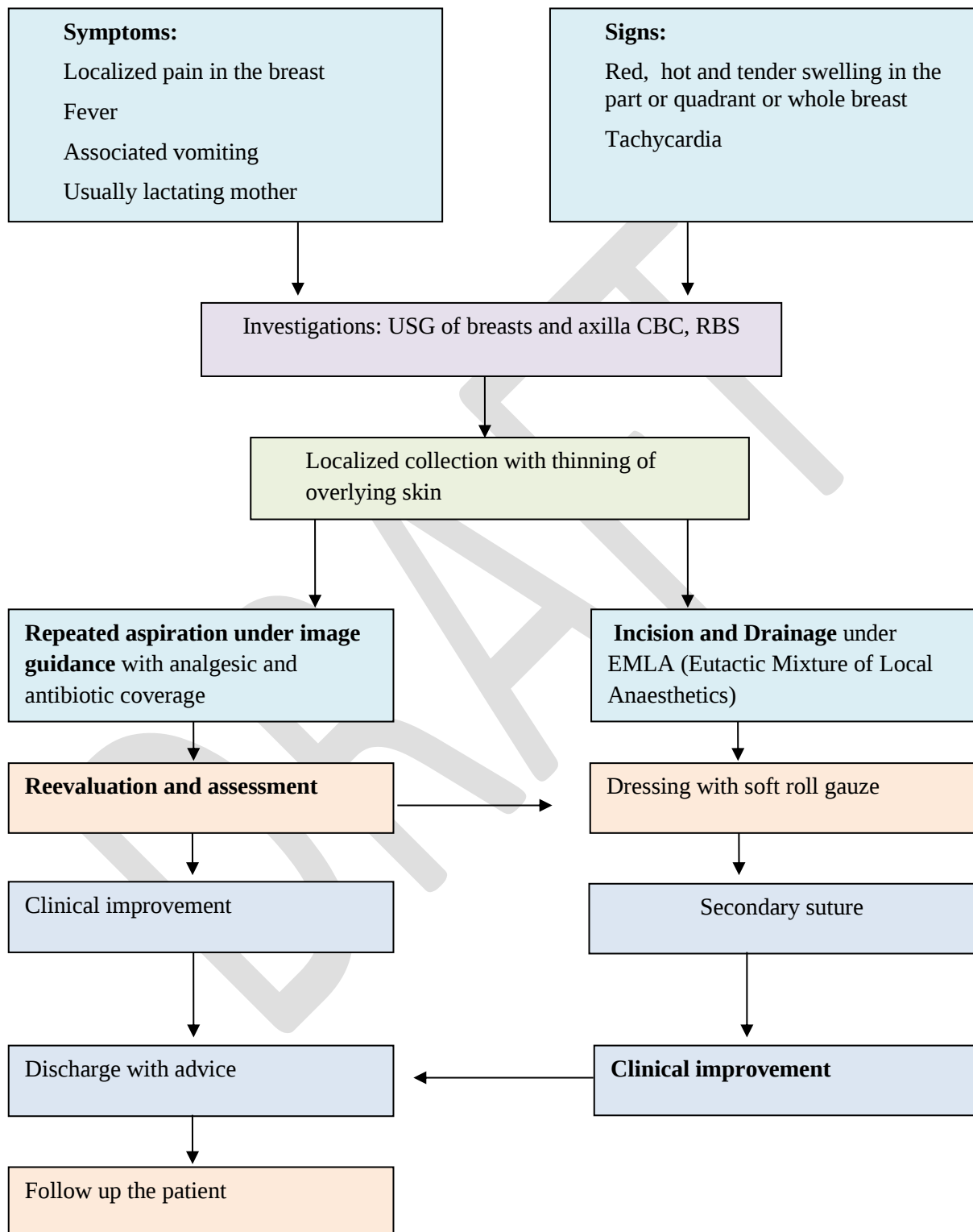
Investigations:

- No special investigation needed;
- Usually, clinical diagnosis is confident but deep lipoma needs ultrasonography

Management:

- Small lipoma needs observation
- If lipoma is large, symptomatic then needs-
 - Excision and Biopsy followed by closure of the wound under L/A or G/A, followed by
 - Histopathological Examination
- **Anaesthesia:** General/local
- **During surgical procedure (where general anesthesia needed)**
 - **Suture materials:**
 - ✓ 1/0 vicryl round body-(1)
 - ✓ 2/0 vicryl round body-(1)
 - ✓ 3/0 vicryl round body-(1)
 - ✓ 1/0 prolene cutting body- (2)
- Inf. Hartsol/5% DNS/5% DA – 1000 ml 8 hourly for 24 hours (3 bags)
- Administration of analgesics. (Inj. Pethedine 100 mg followed by Inj.Ketorolac 30 mg/Inj Tramadol 100 mg 8-12 hourly per day-for 2 days (2 doses)
- Administration of antibiotics. (Inj.Ceftriaxone 1gm I/V 12 hourly daily) (2 doses)
- Administration of antiulcerant (Inj. Omeprazole 40 mg 12 hourly) (2 doses)
- **Where local anesthesia needed**
 - Inj. Lidocaine 2% or Inj. Lidocaine + Adrenaline
 - Inj.Ketorolac 30 mg/ Inj. Diclofenac 75 mg
- **Treatment after surgery:**
 - Cap. Flucloxacillin 500mg, 1+1+1+1 for 7 days
 - Cap. Omeprazole 20mg, 1+0+1 for 7 days
 - Tab.Diclofen 50mg, 1+0+1 for 5days

Breast Abscess



Burn

BURN

Admission Criteria:

- Burns greater than 10% of total body surface Area (TBSA) in pediatric (<14 years) & geriatric group (>60 years)
- >15% TBSA in adults (partial thickness)
- Full thickness burns >5% TBSA
- Burns involving special areas: face, hands, feet, genitalia, perineum & major joints
- Electrical burns
- Chemical burns
- Inhalation burns
- Circumferential burns of the limbs, trunk or neck
- Burns in people with pre-existing medical or psychological disorders that could complicate management, prolong recovery or increase mortality
- Burns associated with trauma
- Burns with pregnancy
- Burns in patients who will require emotional, rehabilitative intervention

Criteria of burn patients to be called "CRITICAL" :

- >15% in a child
- >30% in adult with partial thickness or full thickness burn
- All inhalation burn
- All chemical burn
- Patients presenting late with inadequate resuscitation and / or in a state of sepsis
- All electric burn
- Burns with severe co-morbid disease

Primary Survey :

Airway:

- Check airway, maintain patency
- Remove foreign body
- Stabilize neck for suspected spine injury

Breathing:

- Administer 100% O₂
- Expose chest & observe expansion

Circulation:

- Insert 2 I/V cannula or a central venous catheter preferably through unburned skin
- Draw blood for essential studies: CBC, S. electrolyte & urea, S. creatinine, Liver function test, Blood grouping & Rh typing, S albumin, Arterial blood gas analysis
- Keep patient warm

Primary Survey (Continued) :

Disability:

- Establish Level of consciousness

Exposure:

- Remove all clothing & dwelling
- Keep patient warm

Fluid resuscitation: (>10% in children, >15% in adults need Fluid)

- Estimate burn area
- Commence iv fluid (Hartmann's saline)
- Parkland formula ($4 \times \% \text{ of TBSA burn} \times \text{weight in kg burn}$)

Pain relief:

- Morphine / Nalbuphine / Tramadol in small incremental dose according to pain score

Nutrition:

- Insert nasogastric tube within 10-14 hours for larger burns (>20% TBSA in adult, >13% in children)

Antibiotics:

- For first week - Gram positive coverage (empirical), if already infected, both gram positive & negative

Tetanus Prophylaxis :

- Both TT & TIG, if not immunized
- Anti-ulcer & anti-histamine drugs
- Vitamins:
 - ✓ Vitamin A (50000 IU), twice daily for 5 days
 - ✓ Vitamin C (500 mg), three times daily for 1 month
 - ✓ Vitamin E (400 mg), three times daily for 1 month
 - ✓ Zinc sulphate (20mg), two times daily, 10 days

Activity:

- Head and of bed raised at 20°

Investigations for burn patient on admission:

Routine investigations:

- CBC
- B. urea, S. creatinine
- S. albumin
- S. bilirubin, SGPT, SGOT
- Urine R/M/E
- Blood grouping & Rh typing
- HBsAg, Anti HCV, HIV 1 & 2
- X-ray chest P/A view, lateral cervical spine, pelvis AP (according to scenario)

If septicemia suspected:

- Wound swab for C/S
- Blood culture
- Fibrin Degradation Product (FDP), D. Dimer

If electric burn

- ECG
- Cardiac enzymes

Assessment of depth of burn wound:

- Epidermal burn (1st degree): involves only the epidermis
- Superficial dermal (superficial 2nd degree): epidermis & some of the dermis
- Deep dermal (deep 2nd degree): epidermis & a larger part of dermis
- Full thickness (3rd degree): involves epidermis & dermis, also may penetrate the underlying structures

Initial wound care:

- Adequate analgesia
- Adequate explanation of procedure
- Maintain warm environment
- Wash and dry within 30 minutes
- Remove loose devitalized tissue, exudate, old dressing
- Blisters are opened and all dead skin removed across the joints
- Reassess the depth & extent of burn
- Dress with silver sulfadiazine cream and cover with fresh sterile gauze & cotton or apply hydrocolloid dressing & cover with fresh gauze
- Reassess 24/48 hours after for any change
- Plan the strategy for further management
- Consider Escharotomy for circumferential full thickness or deep dermal burns of the limbs, chest, abdomen, or neck

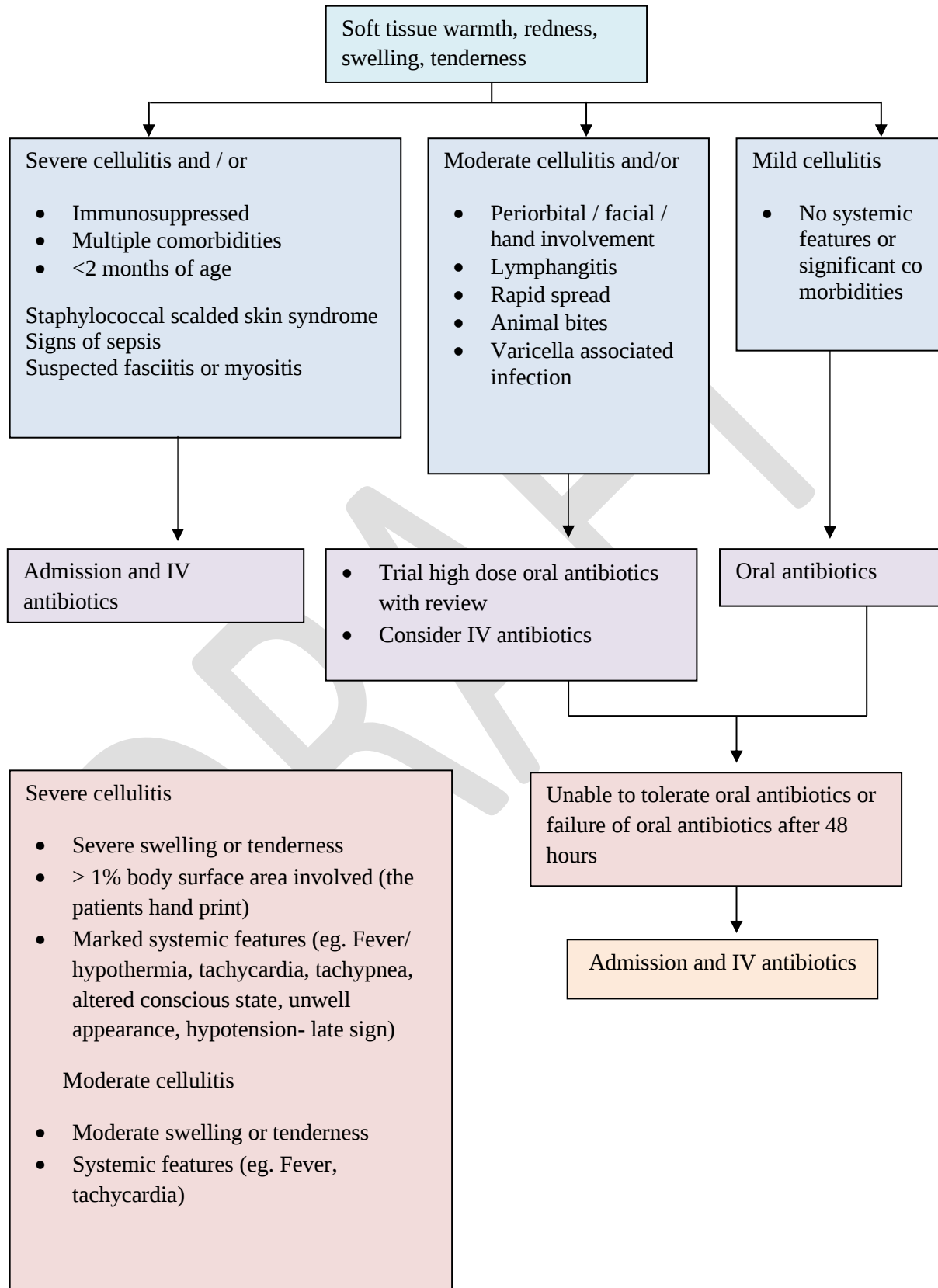
Management of the burn wound from a second day onwards:

- Give maintenance fluid
- Nutritional management
 - ✓ Early enteral feeding is encouraged on it to prevents paralytic ileus
 - ✓ Reduce rise of catabolism
 - ✓ Maintenance integrity and
 - ✓ Reduce risk of bacterial translocation
- Pharmacological management:
 - ✓ Mild: Paracetamol, Ibuprofen
 - ✓ Moderate: Codeine, Tramadol
 - ✓ Strong: Morphine, Diamorphine
- Non pharmacological management:
 - ✓ Positioning (comfortable positioning reduces pain)
 - ✓ Elevation (elevation of limb & head reduces pain & edema)
 - ✓ Dressing (open wounds are more painful than dressed wound)
 - ✓ Communication (reassurance & explanation reduce anxiety)

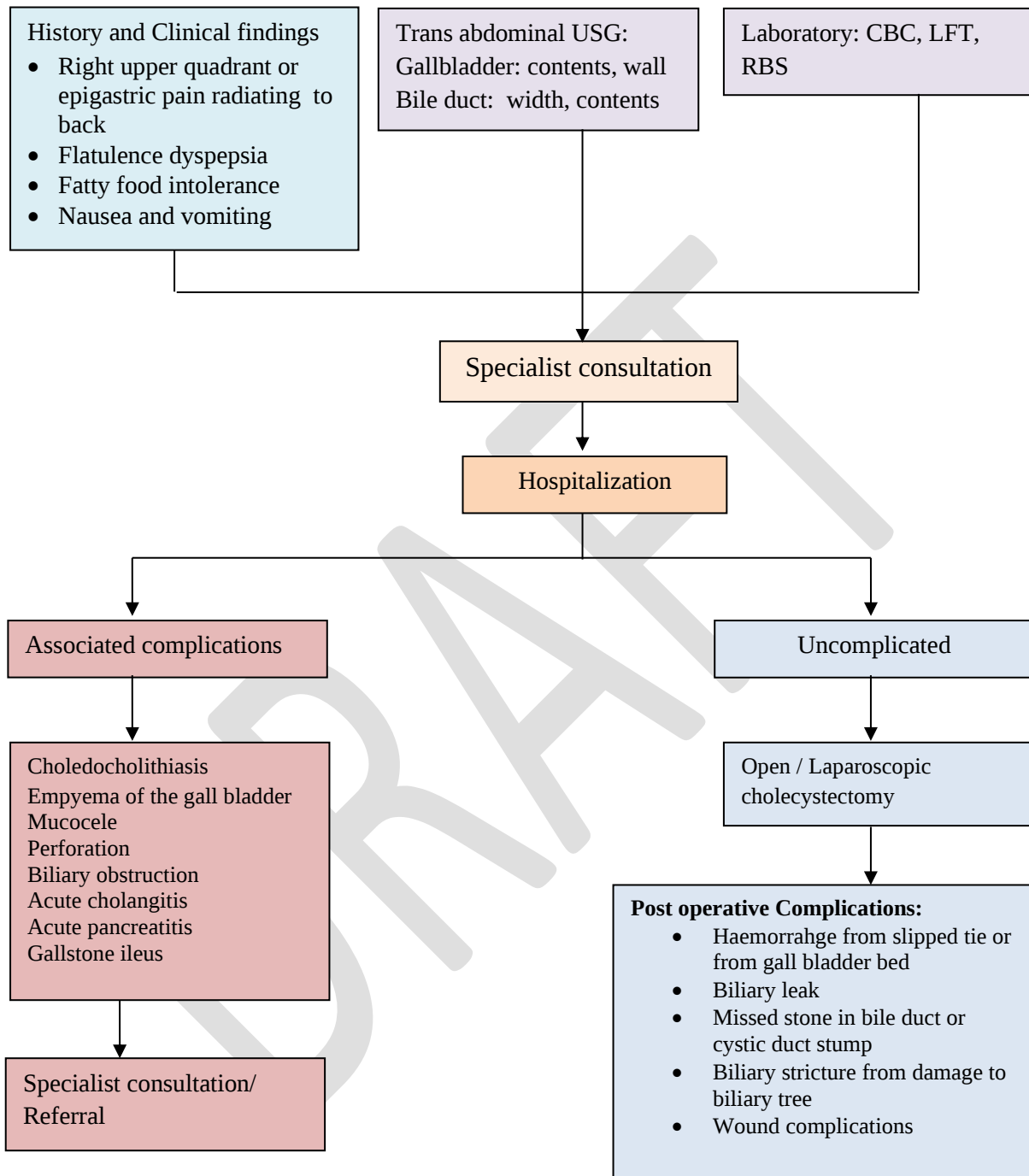
Referral:

- CRITICAL conditions (mentioned above)
- Deteriorate / Not respond to treatment
- Complications

Cellulitis



Cholelithiasis



Disorders/Infection of Skin and Subcutaneous tissue (Ulcer, Pyoderma, Erythrasma etc)

Chronic Skin Ulcer

Diabetic Ulcer

Characteristic trophic ulcer in an uncontrolled diabetic patient

Commonly in foot with sero-purulent discharge

Investigations

Wound swab for C/S

X-ray local part- To see bony involvement

FBS and 2 Hours after 75g glucose

Diagnosis

Characteristic moist ulcer with Charcot joint

Management

- Strict glycemic control
- Regular foot care
- Wound debridement and soft dressing
- Coverage of wounds and limited amputation
- *Anaesthesia:* Regional (Spinal)

During surgical procedure

Suture materials: 1/0 vicryl round body-(1)
1/0 prolene cutting body- (2)

- Inf. Hartsol / DNS/5% DA – 1000 ml 8 hourly for 24 hours (3 bags)
- Administration of analgesics. (Inj. Pethedine 100 mg followed by Inj.Ketorolac 30 mg/
Inj Tramadol 100 mg 8-12 hourly per day-for 2 days (2 doses)
- Administration of antibiotics. (Inj.Ceftriaxone 1gm I/V twice daily) (2 doses)
- Administration of antiulcerant (Inj. Omeprazole 40 mg 12hourly) (2 doses)
- **Treatment during discharge**
- Cap. Cefixime 400mg, 1+0+1 for 7 days
- Cap. Omeprazole 20mg, 1+0+1 for 7 days
- Tab. Ketorolac 10mg, 1+0+1 for 7 days
- Regular dressing with Povidone Iodine 10% solution for 2 weeks

Venous Ulcer

Poorly healing ulcer in gaiter area of lower limb in patient with varicosity and prolonged standing

Investigations

Wound swab for C/S

Wedge biopsy to exclude malignancy

Check DM

Duplex scan

Diagnosis

According to CEAP classification of Venous Disorder (C= $\geq$ 4)

Management

- ❖ Identification and treatment of cause- arterial or venous
- ❖ Improve nutrition, good hygiene and limb elevation
- ❖ Wound debridement and Layered Dressing with elastocrep
- ❖ Meshed skin graft of wound

Anaesthesia: General/ Regional (Spinal)/Local according to involved area

During surgical procedure

Suture materials: 1/0 vicryl round body-(1)
2/0 vicryl round body-(1)
3/0 vicryl round body-(1)
1/0 prolene cutting body- (2)

Inf. Hartsol/5% DNS/5% DA – 1000 ml 8 hourly for 24 hours (3 bags)

- Administration of analgesics. (Inj. Pathedine 100 mg followed by Inj.Ketorolac 30 mg/ Inj Tramadol 100 mg 8-12 hourly per day-for 2 days (2 doses)
- Administration of antibiotics. (Inj.Ceftriaxone 1gm I/V twice daily) (2 doses)
- Administration of antiulcerant (Inj. Omeprazole 40 mg 12 hourly) (2 doses)

Treatment during discharge

Cap. Cefixime 400mg, 1+0+1 for 7 days

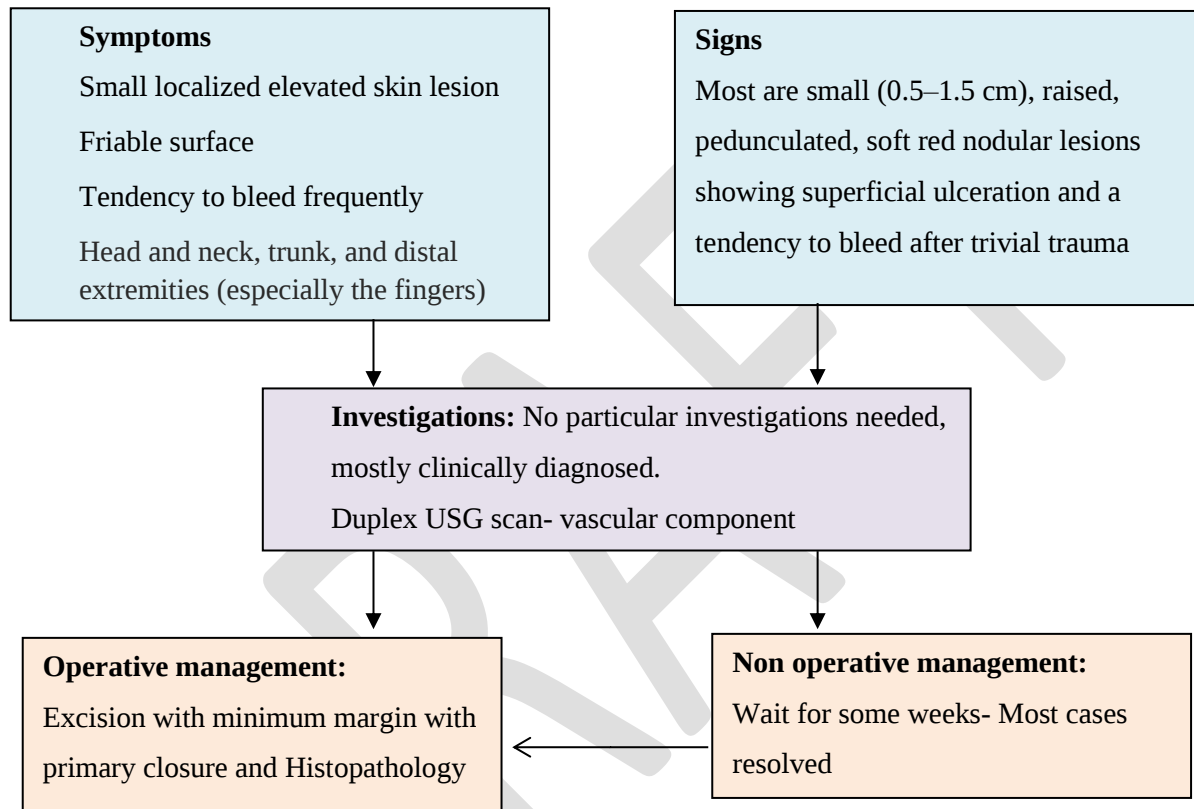
Cap. Omeprazole 20mg, 1+0+1 for 7 days

Tab. Ketorolac 10mg, 1+0+1 for 7 days

Regular dressing with Povidone Iodine 10% solution for 2 weeks

Pyogenic Granuloma

Pyogenic granulomas are skin growths that are small, round, and usually bloody-red in color. They tend to bleed because they contain a large number of blood vessels. They're also known as lobular capillary hemangioma or granuloma telangiectaticum.



Pyoderma Gangrenosum

Pyoderma or Pyoderma gangrenosum is characterized by cutaneous ulceration with purple undermined edges. It is secondary to heightened immunological reactivity, usually from another disease process such as inflammatory bowel disease; rheumatoid arthritis, non-hodgkin's lymphoma or wegener's granulomatosis

Clinical features

Pyoderma gangrenosum usually starts with a small, red bump on your skin which may resemble a spider bite. Within days, this bump can develop into a large, painful open sore

Investigations: No particular investigations needed, exclude secondary causes of the condition

Management: Aim of treatment is at reducing inflammation, controlling pain and promoting wound healing. Specialized wound care in a burn treatment center.

A) Medications: Corticosteroids, Immune suppressants, Analgesics.

B) Wound care: wound cover with a moist dressing with elasticized wrap. Affected area elevation

Risk Factors

Age and Sex: More common among women. Usually occurs between the ages of 40 and 50

Inflammatory bowel disease. Patient with ulcerative colitis or Crohn's disease are at increased risk

Rheumatoid arthritis

Haematological malignancy

If large defect: Needs flap

Erythrasma

Erythrasma is a chronic superficial infection of the intertriginous areas of the skin. The incriminated organism is *Corynebacterium minutissimum*, which usually remains as a normal human skin inhabitant

Clinical features:

- Dark discolored area of skin limited to body folds that are naturally moist
- Itching
- Immunosuppressed patients are in risk Suspect diabetes

Physical Examination:

- Typical appearance of erythrasma is well-demarcated, brown-red macular patches
- The skin has a wrinkled appearance with fine scales

Investigations:

Wood light examination: the porphyrins produced by the bacteria fluoresce with a coral pink color

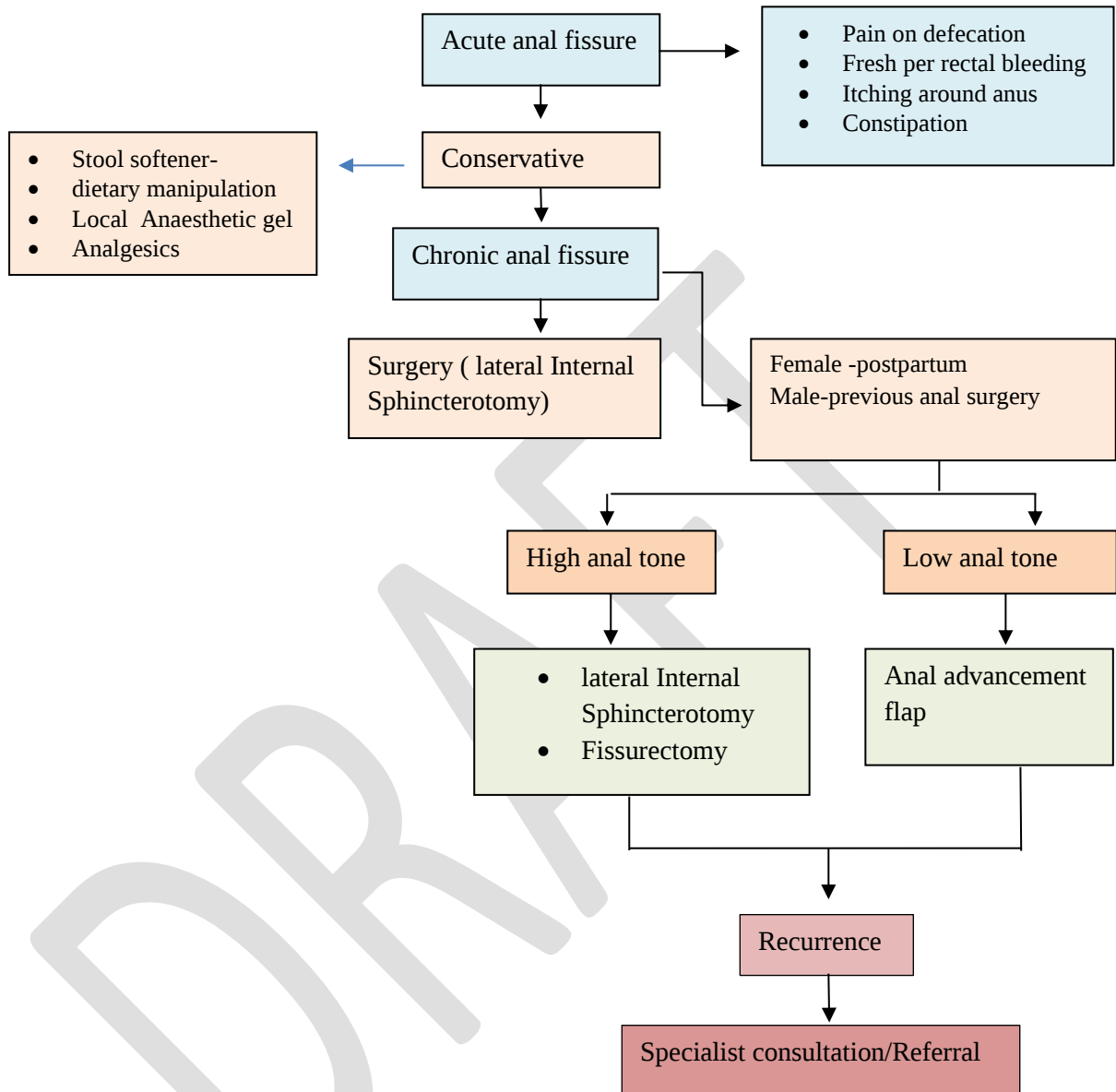
Gram staining reveals of erythrasma lesions gram-positive filamentous rods

Management:

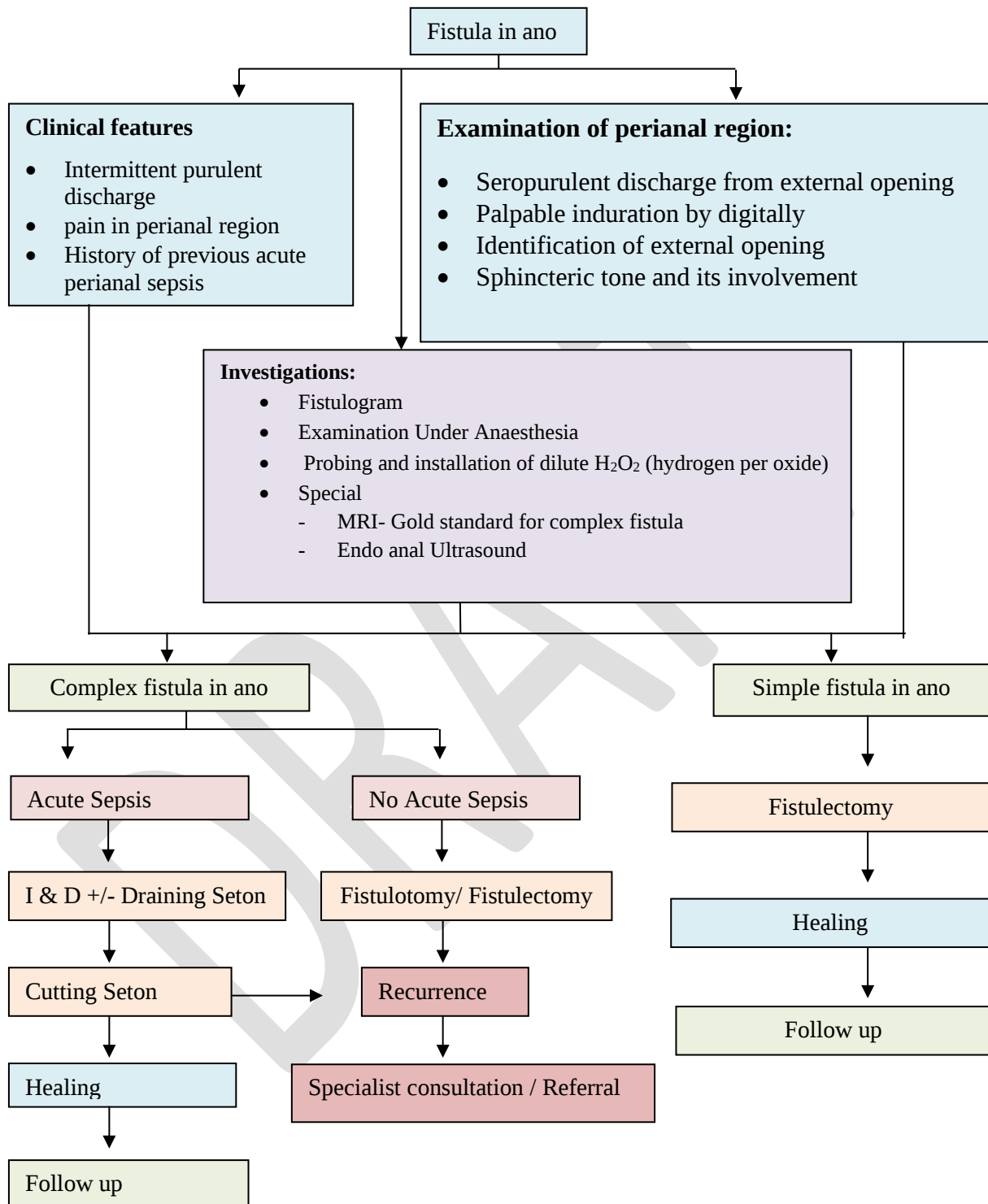
- Maintenance of good personal hygiene
- Medical Care - Infection may be treated with topical or oral agents
 - Topical:
Erythromycin or clindamycin or fusidic acid cream or miconazole cream
 - Systemic:
Single-dose clarithromycin or amoxicillin-clavulanic acid for systemic illness

Anal Fissure and Fistula

Anal Fissure



Fistula in Ano



Follicular Cyst of Skin and Subcutaneous Tissue

These are cystic lesions of skin and subcutaneous tissue involving follicular occlusion followed by folliculitis and secondary infection with skin flora.

These include

- Pilar cyst
- Sebaceous cyst
- Epidermal inclusion cyst etc.

Clinical features

- Small swelling within the skin and subcutaneous tissue
- Usually not painful but not when infected
- Remain same size for long period.
-

Physical Examination:

Typical appearance of follicular cystic lesion is

- firm,
- well demarcated,
- smooth surfaced lesions that fixed with skin but freely mobile from underlying structures,
- Often punctum present over the lesion.

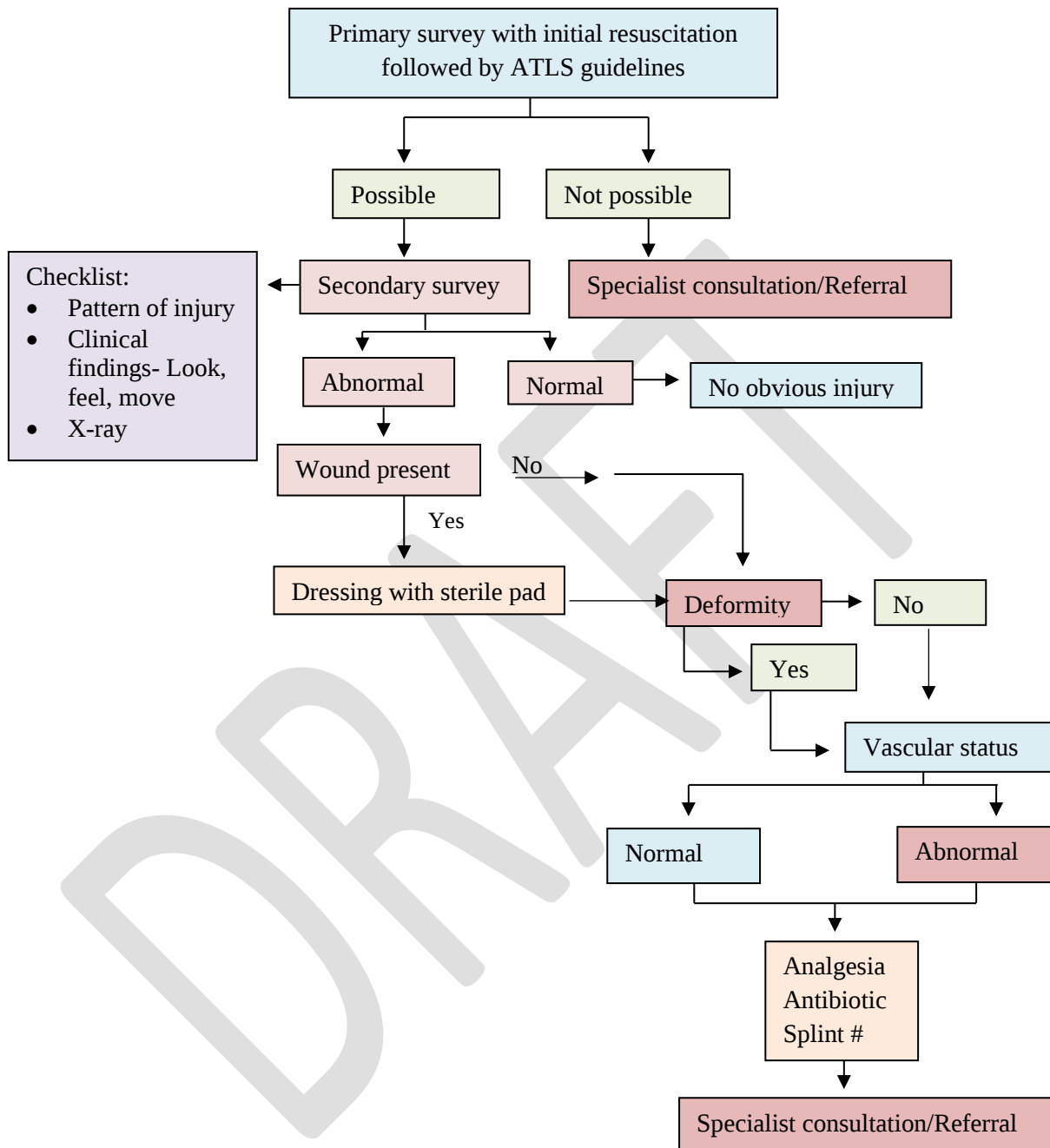
Investigations:

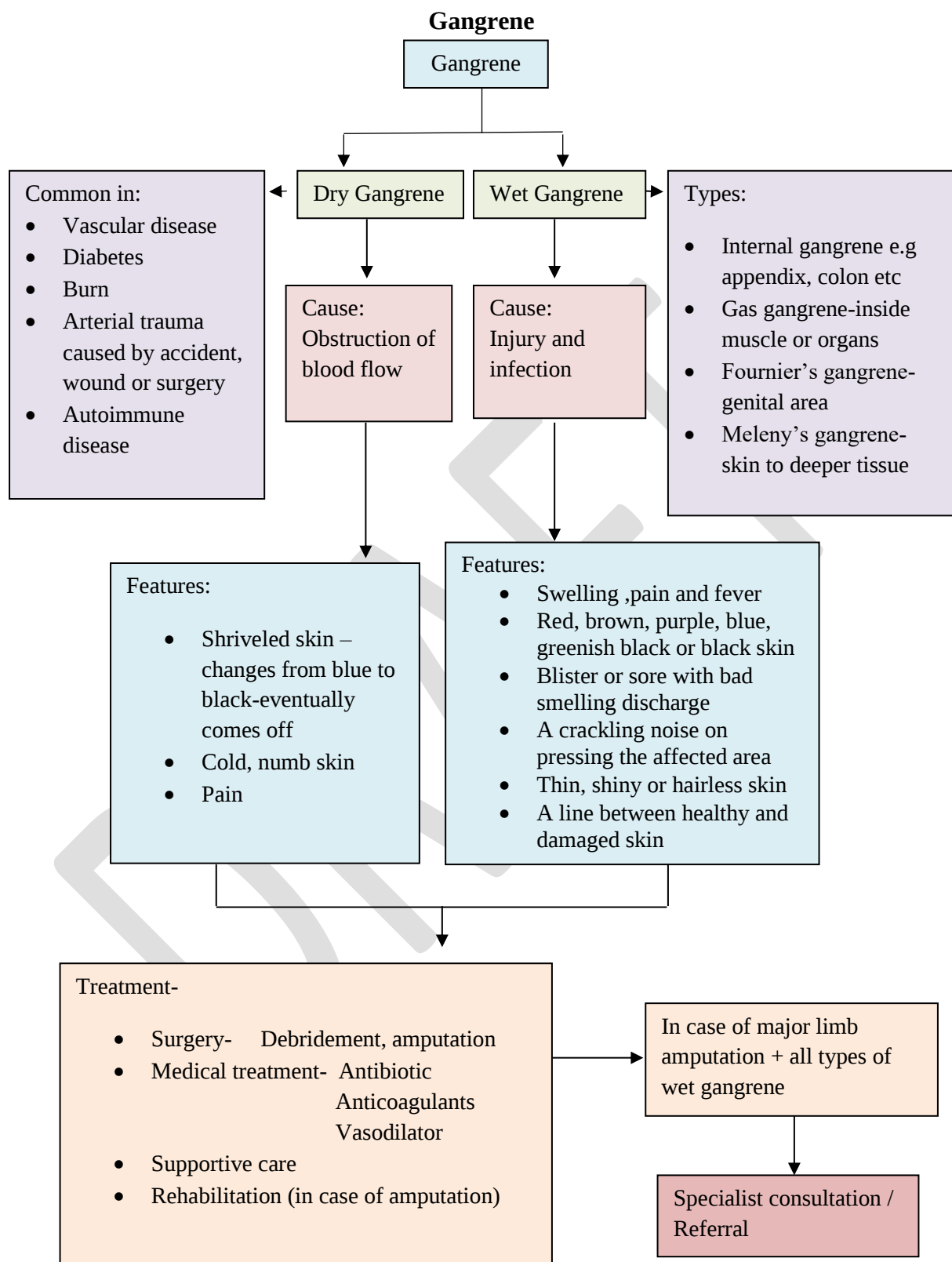
- No special investigation needed;
- Usually, clinical diagnosis is confident but deep lipoma needs ultrasonography.

Management:

- Small longstanding lesions may rupture into surround tissue and infected.
- Needs wound debridement and dressing
 - Inj/Cap Flucloxacillin 500mg 6 hourly for 3-5 days.
- Other symptomatic cases need Excision and Biopsy under local anesthesia followed by Histopathological Examination and closure of the wound
- Where local anesthesia needed
 - Inj. Lidocaine 2% or Inj. Lidocaine + Adrenaline
- Inj.Ketorolac 30 mg/ Inj. Diclofenac 75 mg
- Suture materials:
 - 1/0 vicryl round body-(1)
 - 2/0 vicryl round body-(1)
 - 3/0 vicryl round body-(1)
 - 1/0 prolene cutting body- (2)
- **Treatment after surgery:**
 - Cap. Flucloxacillin 500mg, 1+1+1+1 for 7 days
 - Cap. Omeprazole 20mg, 1+0+1 for 7 days
 - Tab.Diclofen 50mg, 1+0+1 for 5days

Fracture (involving multiple body regions)





Haemorrhoid

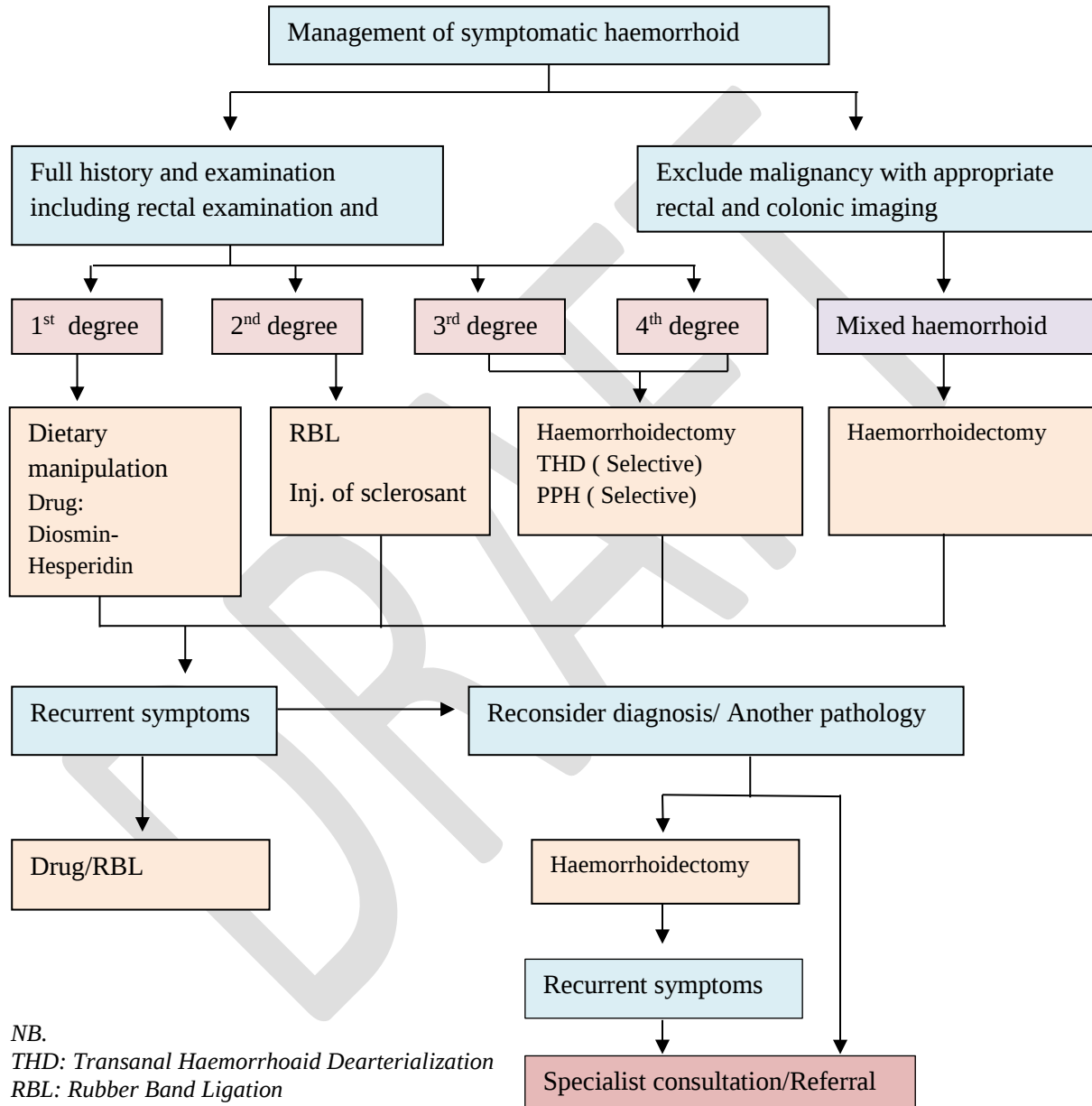
Four degrees of haemorrhoids

First degree- bleed only, no prolapse

Second degree- prolapse, but reduce spontaneously

Third degree- prolapse and have to be manually reduced

Fourth degree- permanently prolapsed



Hydrocele

Hydrocele may be defined as Collection of aseptic fluid in between two layers of tunica vaginalis. Among different types of hydrocele, vaginal Hydrocele is most common. Mainly it is diagnosed clinically but testicular tumor must be excluded if any suspicion remains.

Step1: Taka History

Whether scrotal or inguinoscrotal swelling
How long?
Any pain?
Any H/O trauma?
Is swelling decrease in size during supine position?

Step 2: Examination

Whether scrotal or inguinoscrotal
Cough impulse
Get above swelling
Whether testes palpable separately
Examination of swelling:
-size
-Surface
-Consistency
-Fluctuation
-Transillumination
Must examine opposite testes

Step 3: Investigation

Usually no laboratory investigation is necessary for diagnosis
If any suspicion-must do USG of scrotum to exclude testicular pathology

Step: 4 Treatment

- a. Observe & Follow Up
- b. Surgery

Step 5: Referred to higher level or consult with consultant

- a. If any suspicion regarding testicular pathology
- b. Any complication develop

Hyperplasia of Prostate

Lower urinary tract symptoms:

Voiding:
Hesitancy
Poor flow
Intermittent stream
Dribbling
Sensation of poor bladder
Emptying episodes of near retention
Storage:
Frequency
Nocturia
Urgency
Urge incontinence
Nocturnal incontinence

Features of bladder outflow obstruction:

Acute retention of urine
Chronic retention
Overflow incontinence
Impaired bladder emptying

General examination: signs of chronic renal impairment with anaemia and dehydration.

Abdominal examination: in patients with chronic retention, a distended bladder will be found on palpation, on percussion.

Rectal examination: the posterior surface of the prostate is smooth, convex and typically elastic but the fibrous element may give rise to firm consistency

Investigation:

- USG of KUB and prostate
- Urine analysis for blood, glucose, protein and pus cell
- Urine culture for infection
- Serum creatinine
- Urinary flow rate and residual volume measurement
- PSA

Management

- Conservative: Drugs- Cap. Tamsulosin plus Dutasteride, daily for 6 months
- Surgery: Trans-urethral resection of the prostate (TURP)

Indication for TURP - combination of severe symptoms and a low flow rate <12ml/s.

Anaesthesia: Regional (Spinal) anaesthesia

During surgical procedure and postoperatively

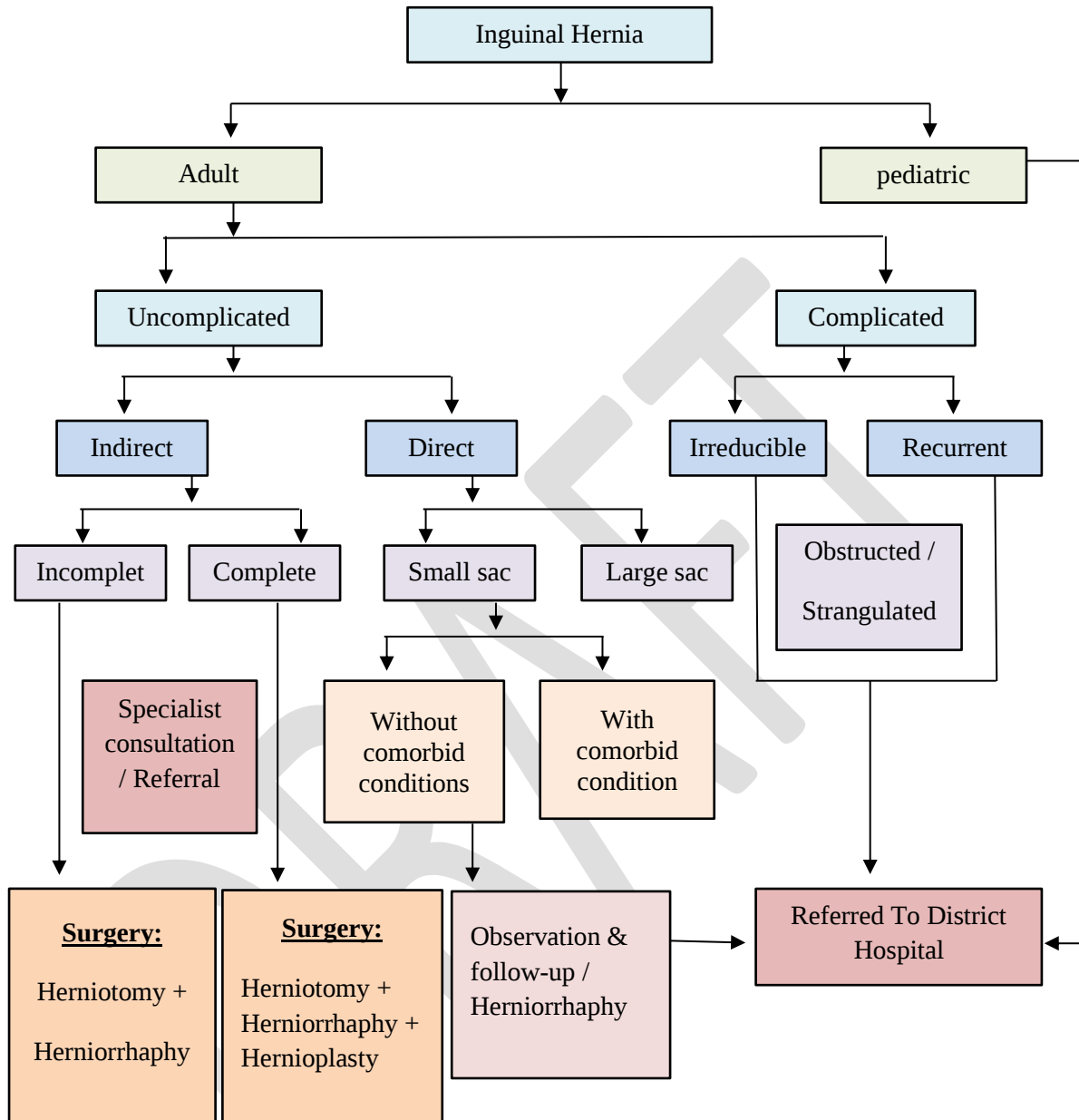
- Inf. Hartsol/5% DNS/5% DA – 1000 ml 8 hourly for 24 hours (6 bags)
- Administration of analgesics. (Inj. Pethidine 100mg followed by Inj.Ketorolac 30 mg/ Inj Tramadol 100 mg 8-12 hourly per day-for 2 days (4-6 doses))
- Administration of antibiotics. (Inj.Ceftriaxone 1gm I/V twice daily) (4 doses)
- Administration of antiulcerant (Inj. Omeprazole 40 mg 12 hourly for 2 days) (4 doses)

- Glysine solution -1000ml (30 bags)
- Normal Saline -1000ml (10-15 bags) for irrigation
- Catheterization till discharge
- Laxatives- Syp. Avolac 3tsf 8-12 hourly (2 bottles)
- From 1st POD patient should be on oral diet and medication except Inj.antibiotic for 2 days.

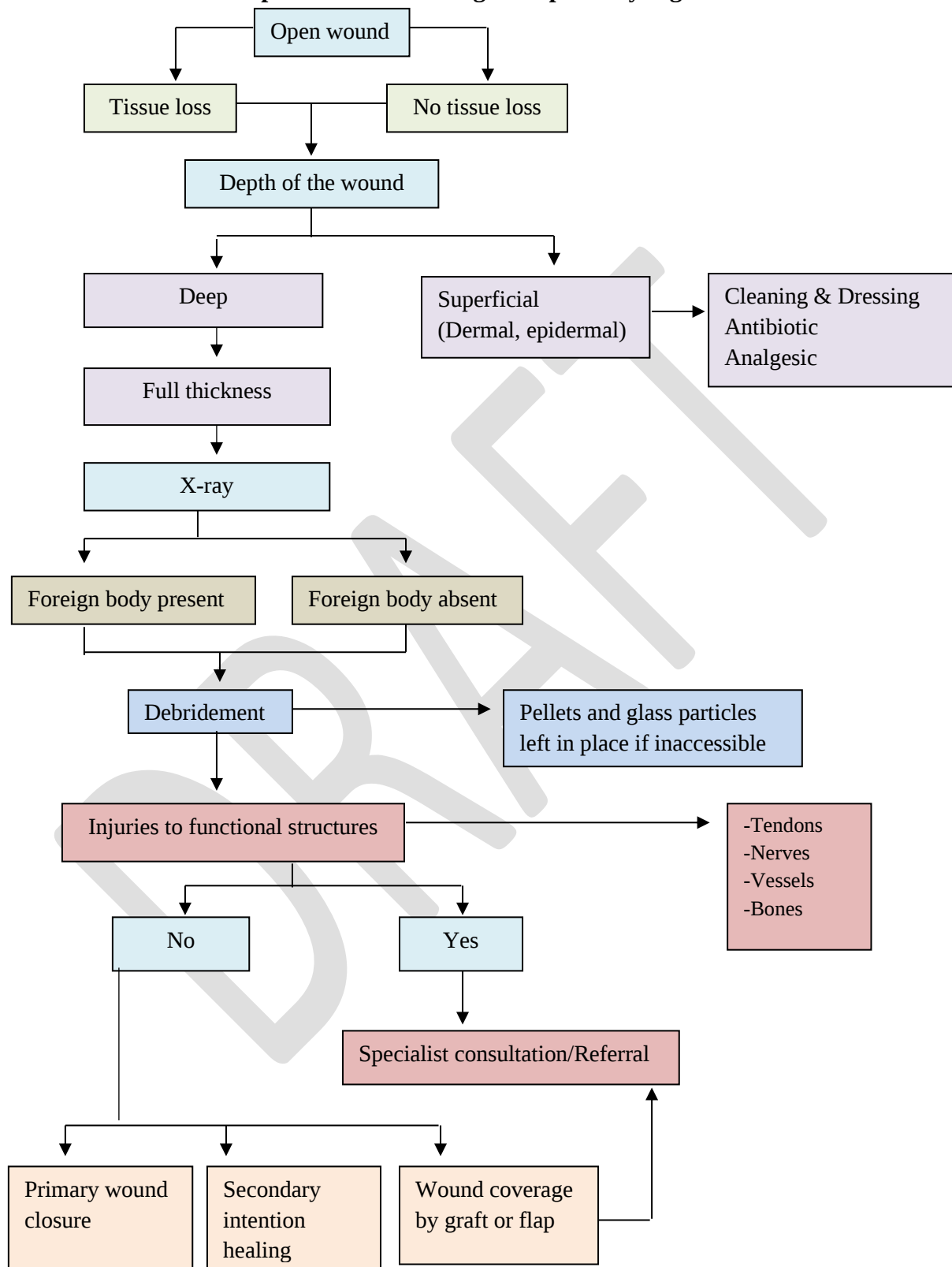
Treatment during discharge on 5th POD

- Cap. Cefixime 400mg, 1+0+1 for 7 days
- Cap. Omeprazole 20mg, 1+0+1 for 7 days
- Tab. Ketorolac 10mg,1+0+1 for 7 days
- Laxatives -Syp. Avolac 3tsf 8-12 hourly for 7 days

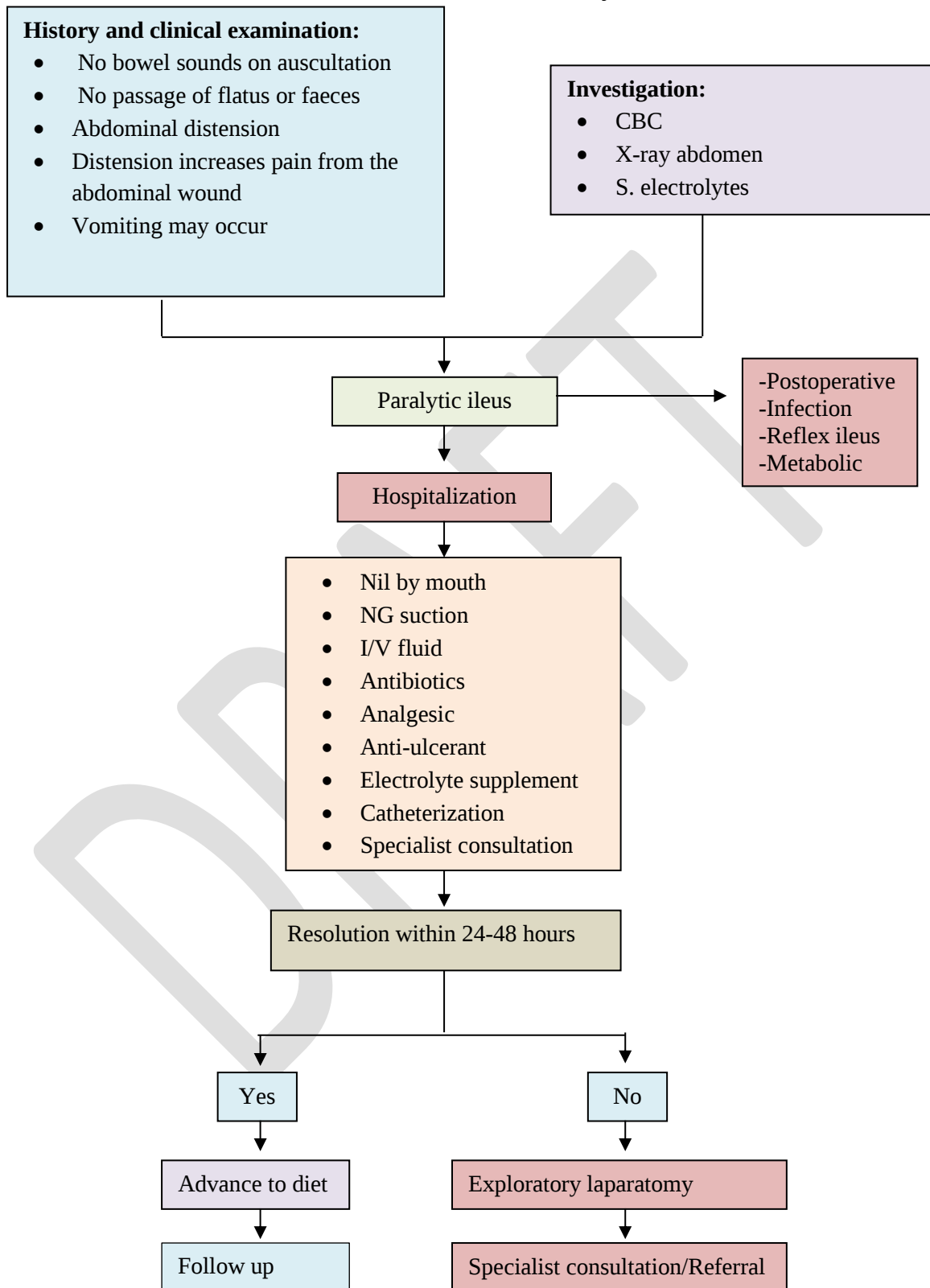
Hernia (Inguinal)



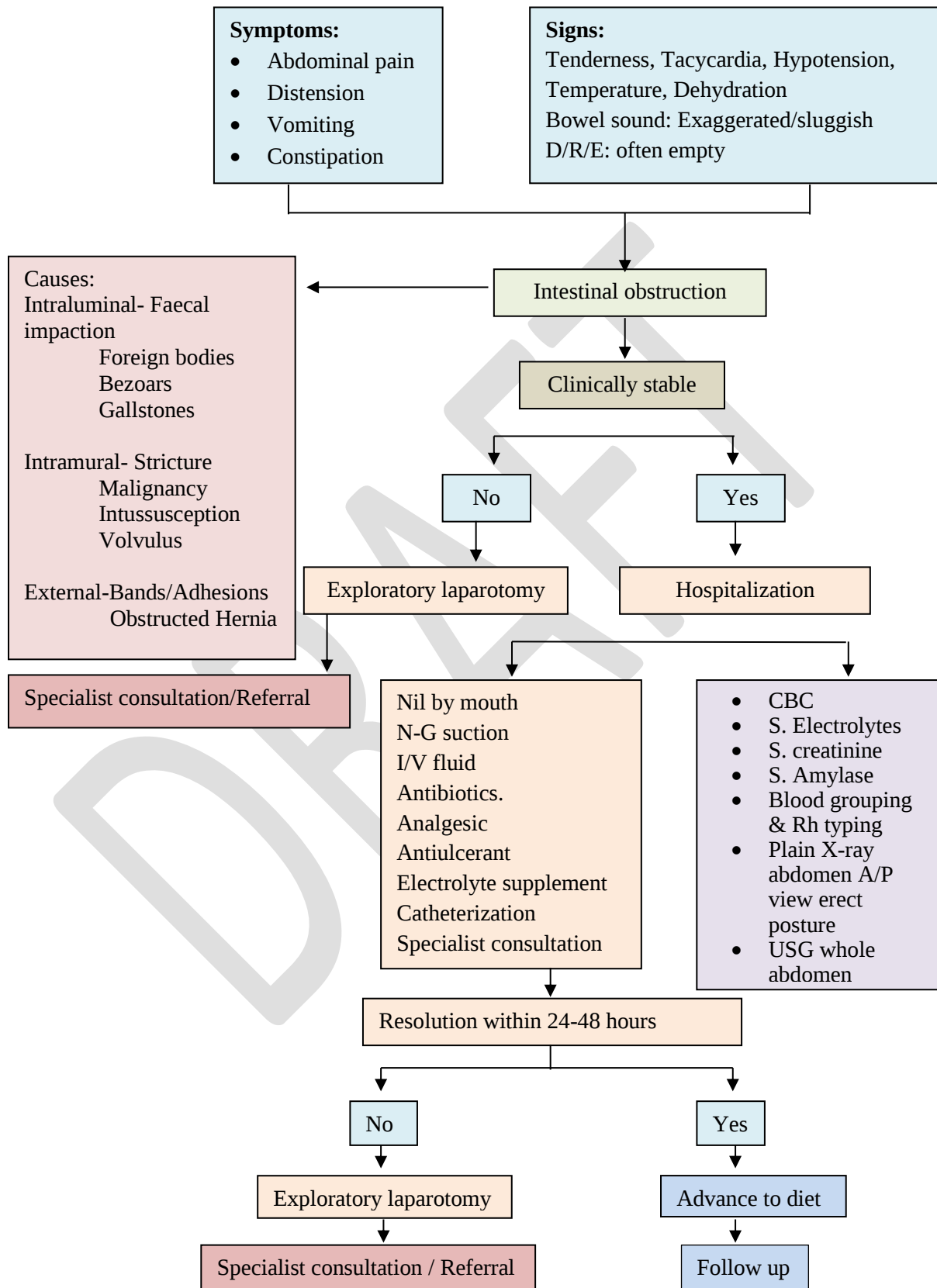
Open wound involving multiple body regions



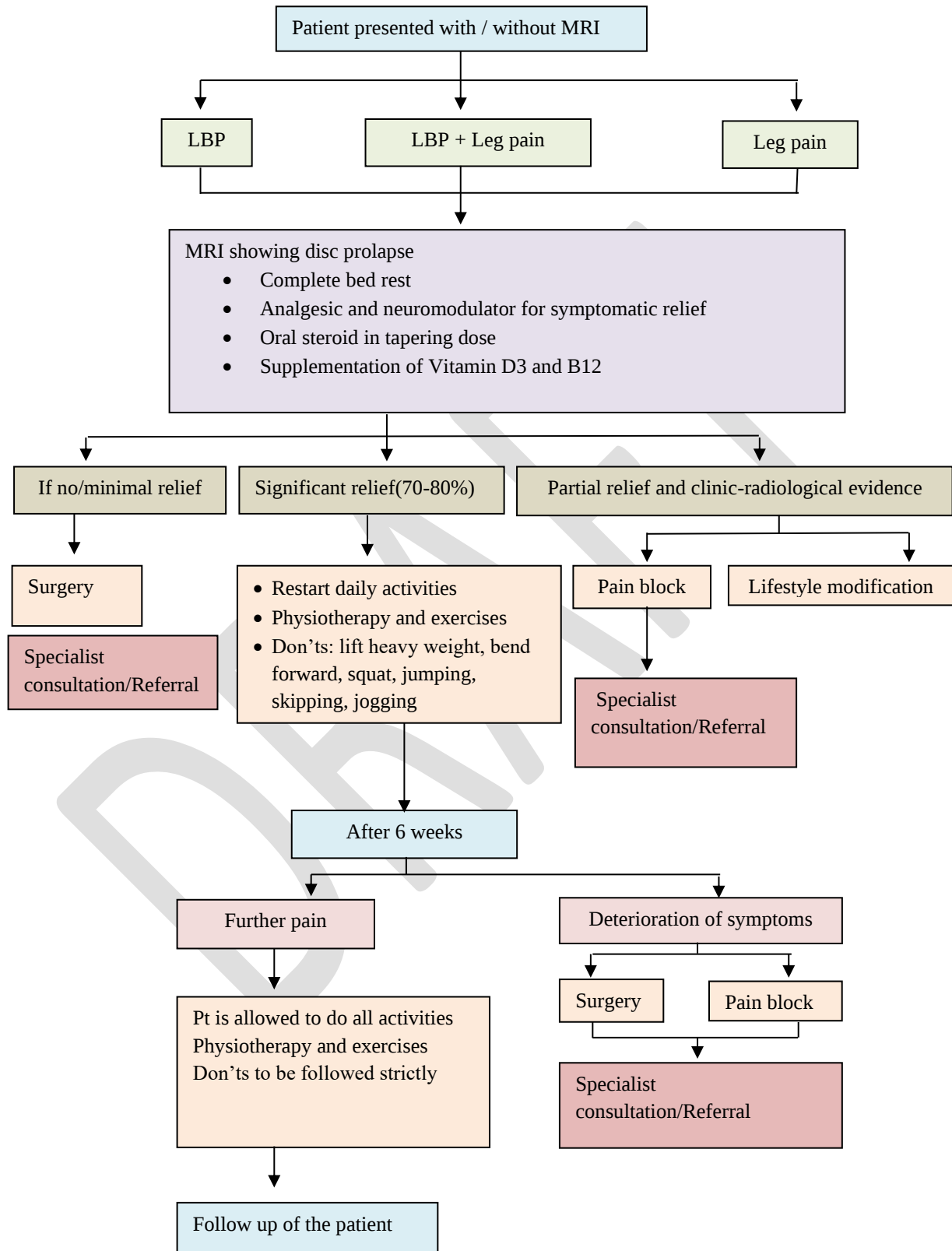
Intestinal Obstruction and Paralytic Ileus



Intestinal obstruction



Prolapsed Lumbar Intervertebral Disc (PLID)



Retention of Urine

Types:

- Acute
- Chronic

Clinical presentation of acute urinary retention:

- Inability to pass urine and severe lower abdominal discomfort
- Bladder is usually palpable and tender

Management of acute urinary retention:

- Urgent catheterisation: either per urethra or suprapubically

Clinical presentation of chronic retention of urine:

- Patients often have no pain
- Low pressure retention may present with overflow incontinence
- High pressure retention often presents with renal failure

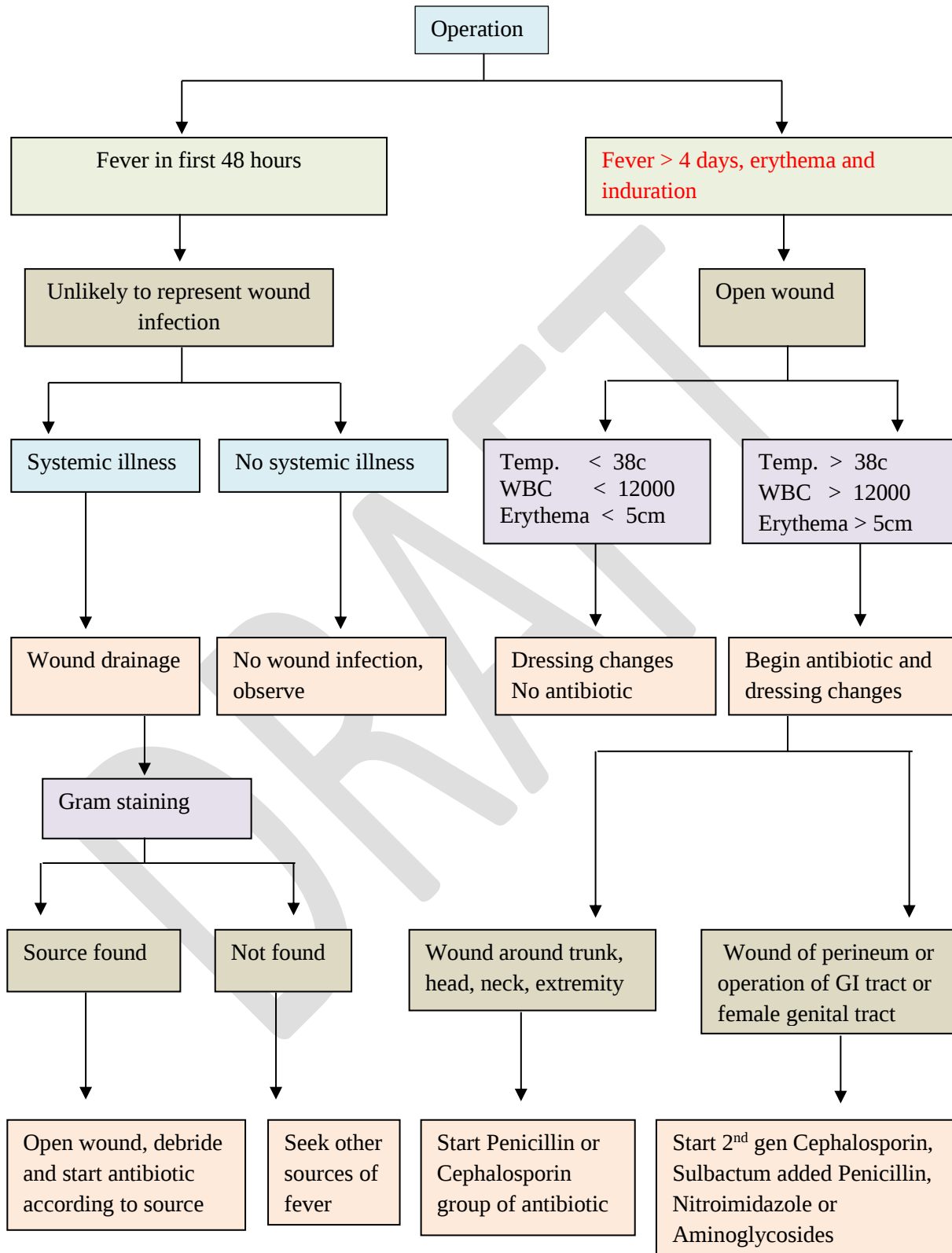
Management of chronic urinary retention:

- Catheterization: Standard treatment
- Monitor diuresis

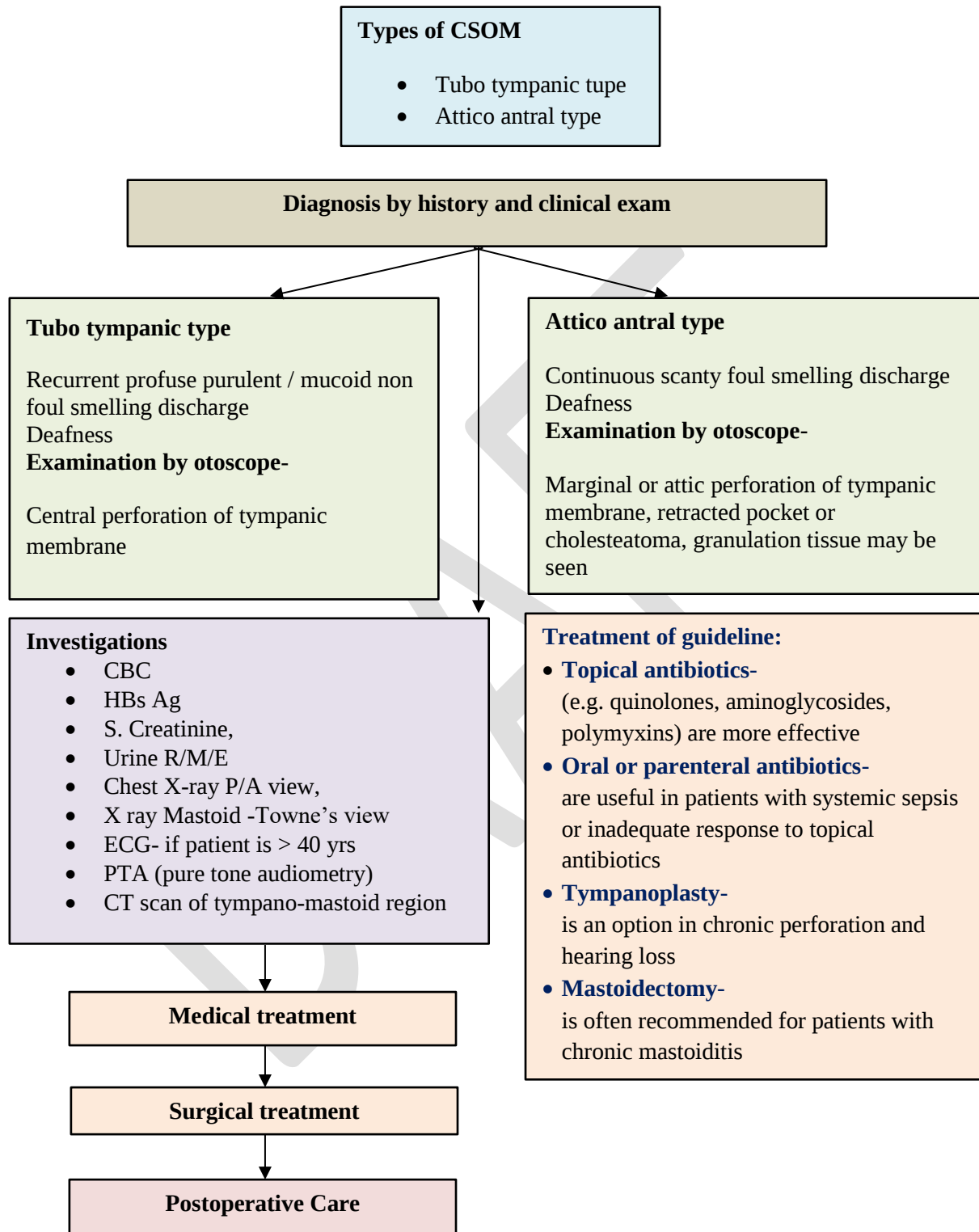
Treatment during discharge

- Tab. Ciprofloxacin 500 mg, 1+1+1 for 7 days
- Cap. Omeprazole 20 mg, 1+0+1 for 7 days

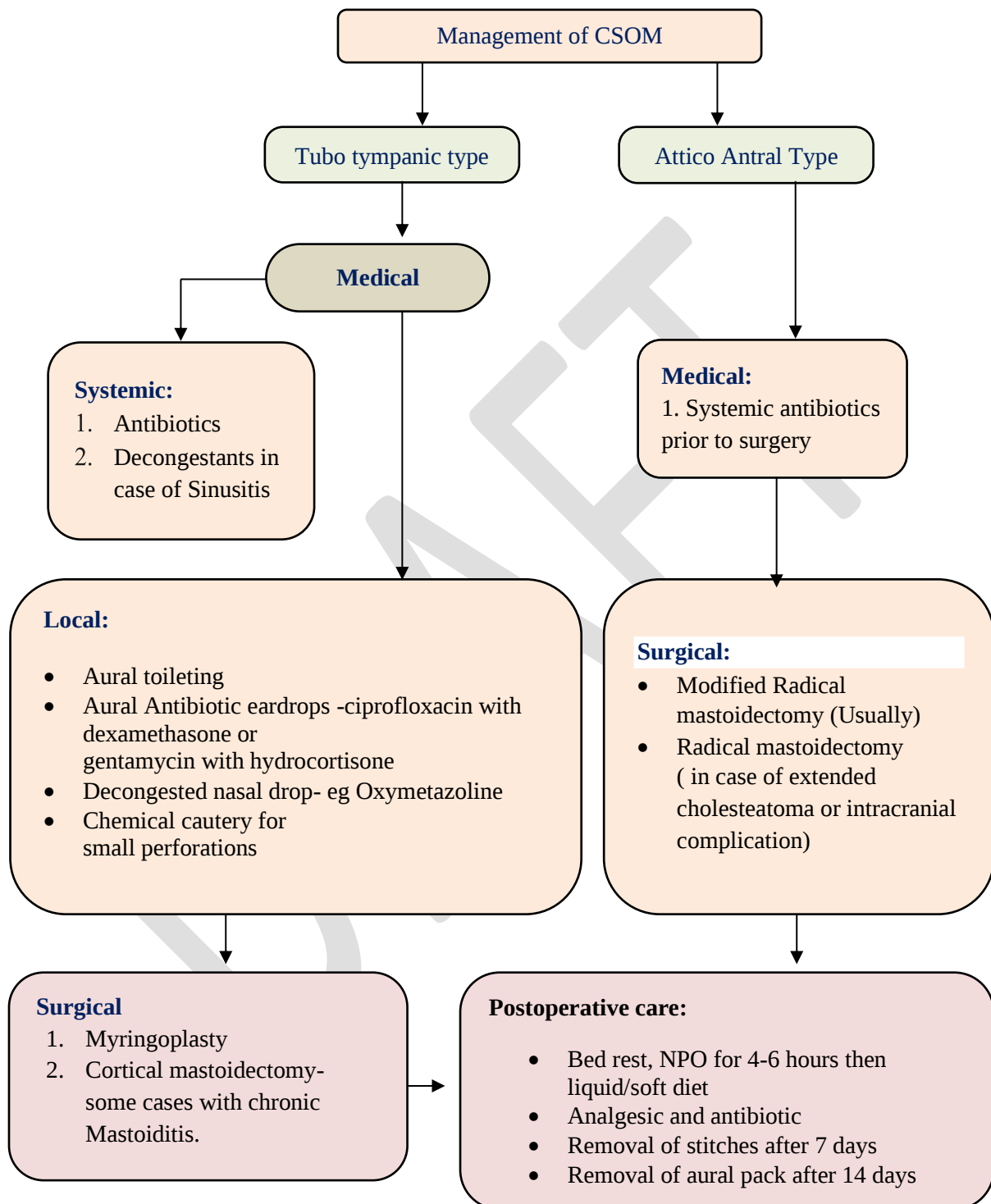
Wound infection



Chronic Suppurative Otitis Media (CSOM)



Chronic Suppurative Otitis Media (CSOM)



Deviated Nasal Septum (DNS)

DNS: Deviation of cartilage and/or bony framework of nasal septum from midline associated with nasal symptoms

Diagnosis by clinical features:

- Nasal obstruction
- Headache, usually frontal
- Recurrent Upper Respiratory Tract Infections
- Epistaxis
- Hyposmia/Anosmia
- External deformity-may present
- Septum deviated to right or left
- Nasal cavity- narrow or roomy

Types of DNS:

- Deviation - C Shaped, S Shaped
- Anterior Dislocation
- Spurs - Angulation at the bony-cartilaginous junction
- Thickening of septum'

On Anterior Rhinoscopy:

Shows the deviations and its type. Compensatory hypertrophy of inferior turbinate is seen opposite to deviated side

Investigations:

1. CBC
2. Random blood sugar
3. BT, CT
4. Serum Creatinine
5. Chest X-ray P/A view
6. X-Ray PNS O/M view (to see associated sinusitis)
7. ECG - if age >40yrs

Treatment:

Minor degrees - no treatment.

Surgical treatment includes:

- Septoplasty ± SMD/Cautery of inferior turbinate under G/A (All Ages)
- SMR under G/A (>17 years)

Post operative follow up:

1. Patient kept in left lateral position
2. Monitoring of P/T/R & bleeding
3. Nothing per oral for about 4 hours then soft cold diet
4. Adequate analgesics & antibiotics should given
5. ANS pack is usually removed after 24 hours
6. Nasal splint usually removed after 7 days
7. Patient is advised for nasal cleansing by saline water

Post operative complications:

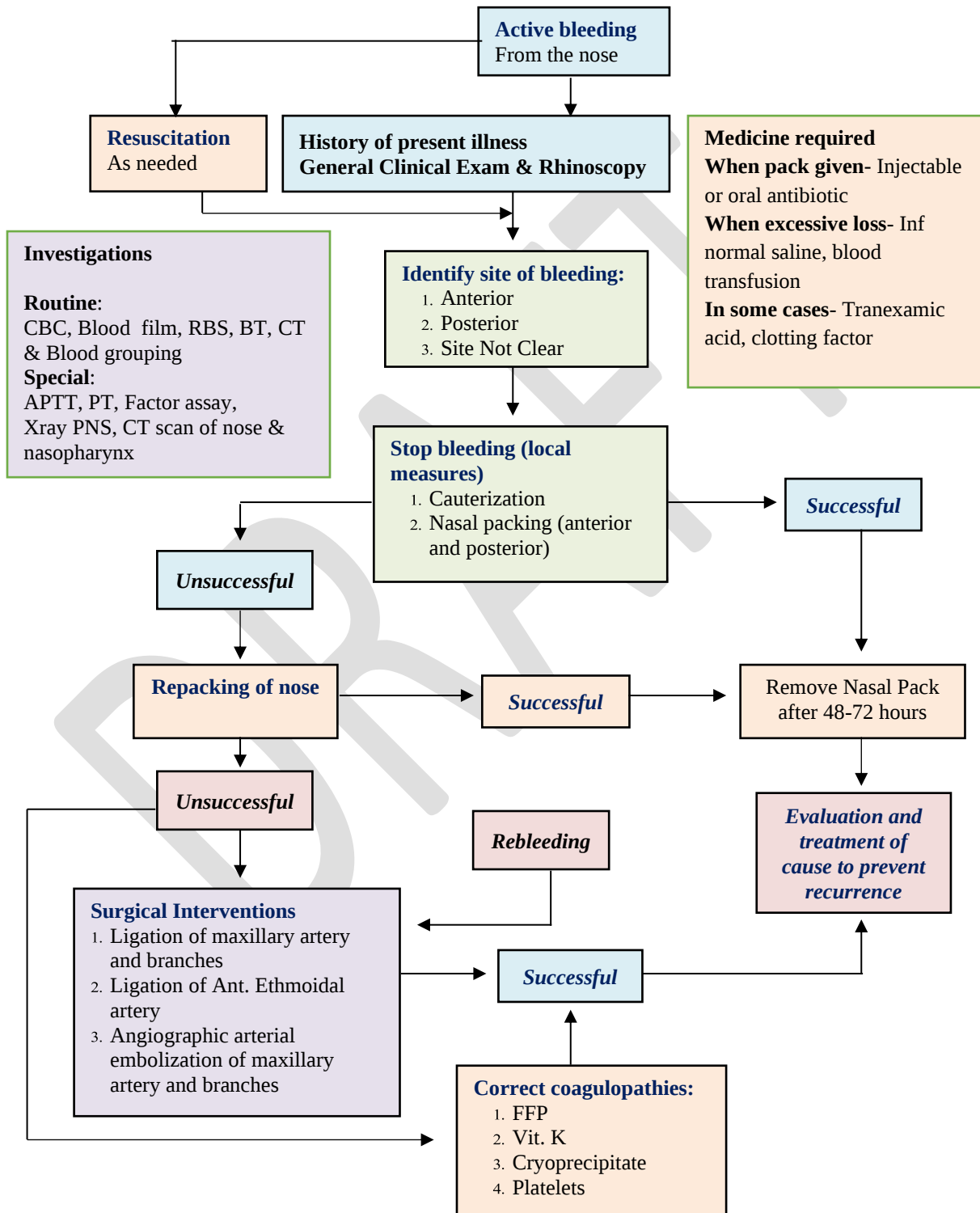
- Bleeding
- Septal hematoma
- Septal abscess
- Septal perforation
- Synechiae/adhesions
- Depression of nasal bridge
- Retraction of columella
- Saddle nose deformity

Treatment of Post-operative complications: If any

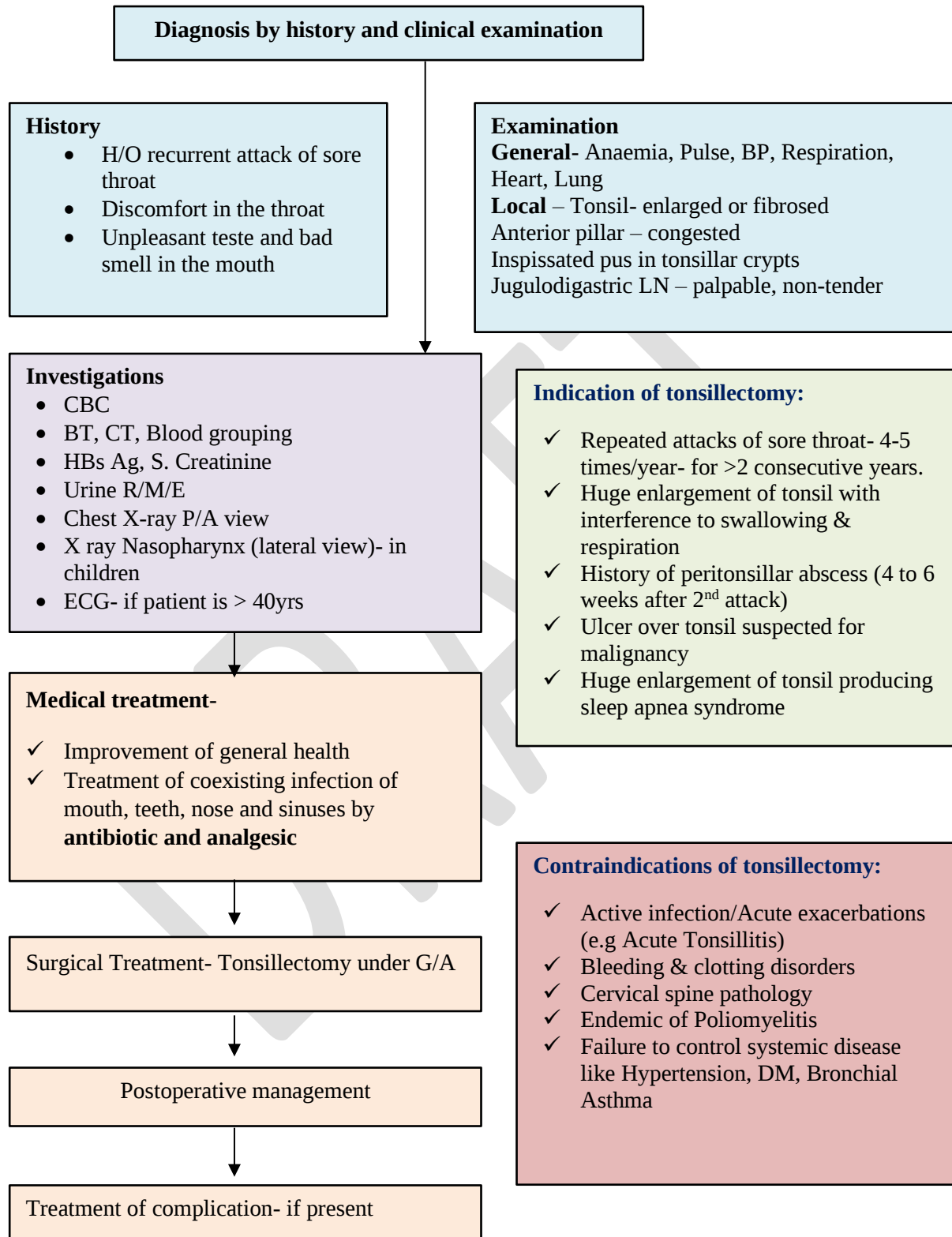
Epistaxis

Epistaxis: Bleeding from interior of nasal cavity and nasopharynx

Epistaxis Algorithm



Chronic Tonsillitis



Postoperative management-

- Please keep the patient in left lateral position
- Frequent check of vital signs- pulse, BP, respiration, temperature etc.
- Look for swallow reflex- if present indicates bleeding in tonsillar fossa
- Nothing by mouth for 4 hours- then soft cold diet
- Antibiotic- Inj. Ceftriaxone- 1-2 gm daily for 3 days then cap. Cefixime (200-400)mg bd for 7 days
- Analgesic and antiulcerant – Inj. Ketorolac / Clofenac suppository followed by tab Ketorolac or diclofenac orally for 5-7 days & Cap. Omeprazole 20 mg bd for 7 days
- Diluted hydrogen peroxide gargling may be advised to keep the operation area clean
- Maintain good hydration

Complication of tonsillectomy:

- Hemorrhage:
 - ✓ Reactionary hemorrhage - within 24 hours of surgery
 - ✓ Secondary hemorrhage - within 2-14 days of surgery, Commonly within 5-7 days
- Aspiration of blood or saliva
- Injury to teeth, lips, gum, palate

Management of haemorrhage:

Reactionary haemorrhage:

- Inspection of tonsillar fossa for any clot or bleeding point.
- Remove the clot & apply pressure with small pack held in artery forceps.
- Monitoring of the vital signs like-pulse, respiration, BP etc.
- Gurgle with hydrogen peroxide
- ✓ **If bleeding Stops:** Patient is kept under watch, hypovolemia and blood loss are treated
- ✓ **If bleeding persists:** call for consultant for Ligation or Cauterization of bleeding vessel under GA.

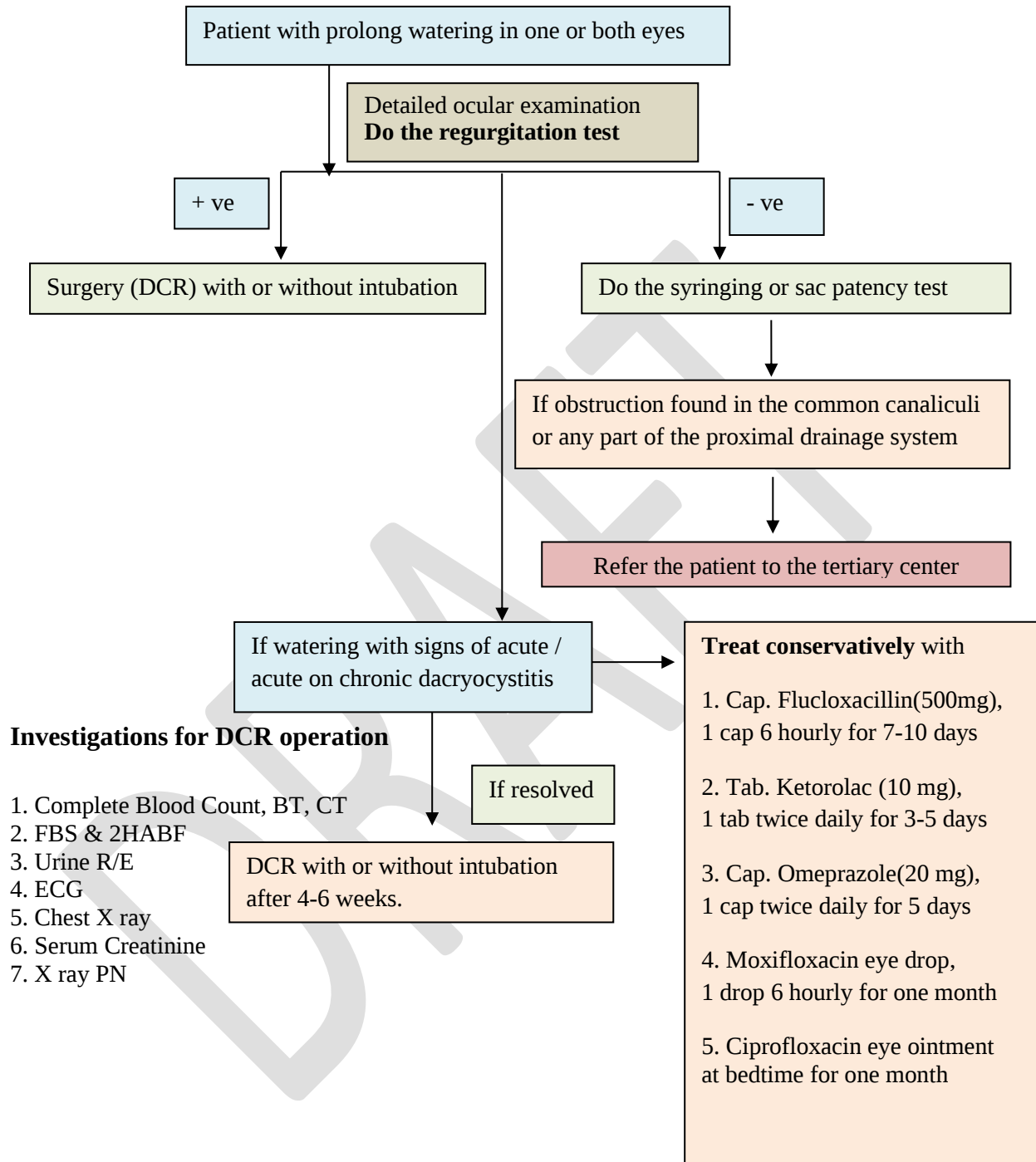
Secondary haemorrhage:

This is due to infection of the tonsillar fossa

- Swab from tonsillar fossa for c/s
- Parenteral broad-spectrum antibiotics - Inj. Ceftriaxone 1-2 gm IV for 7 days
- Cold liquid diet
- General management for reactionary hemorrhage

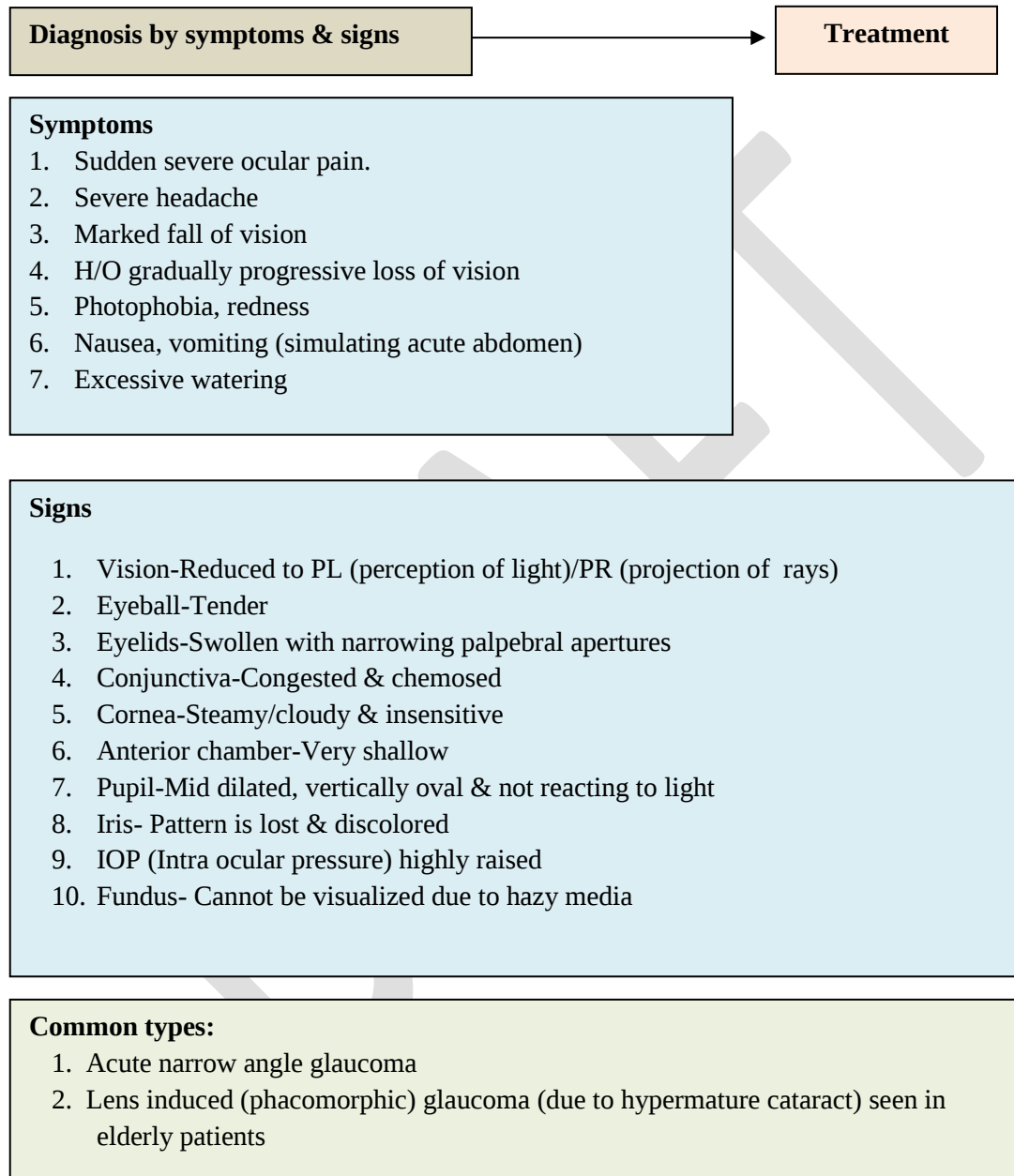
If bleeding persists then patient is shifted to operation theater & inter pillar suturing may be required.

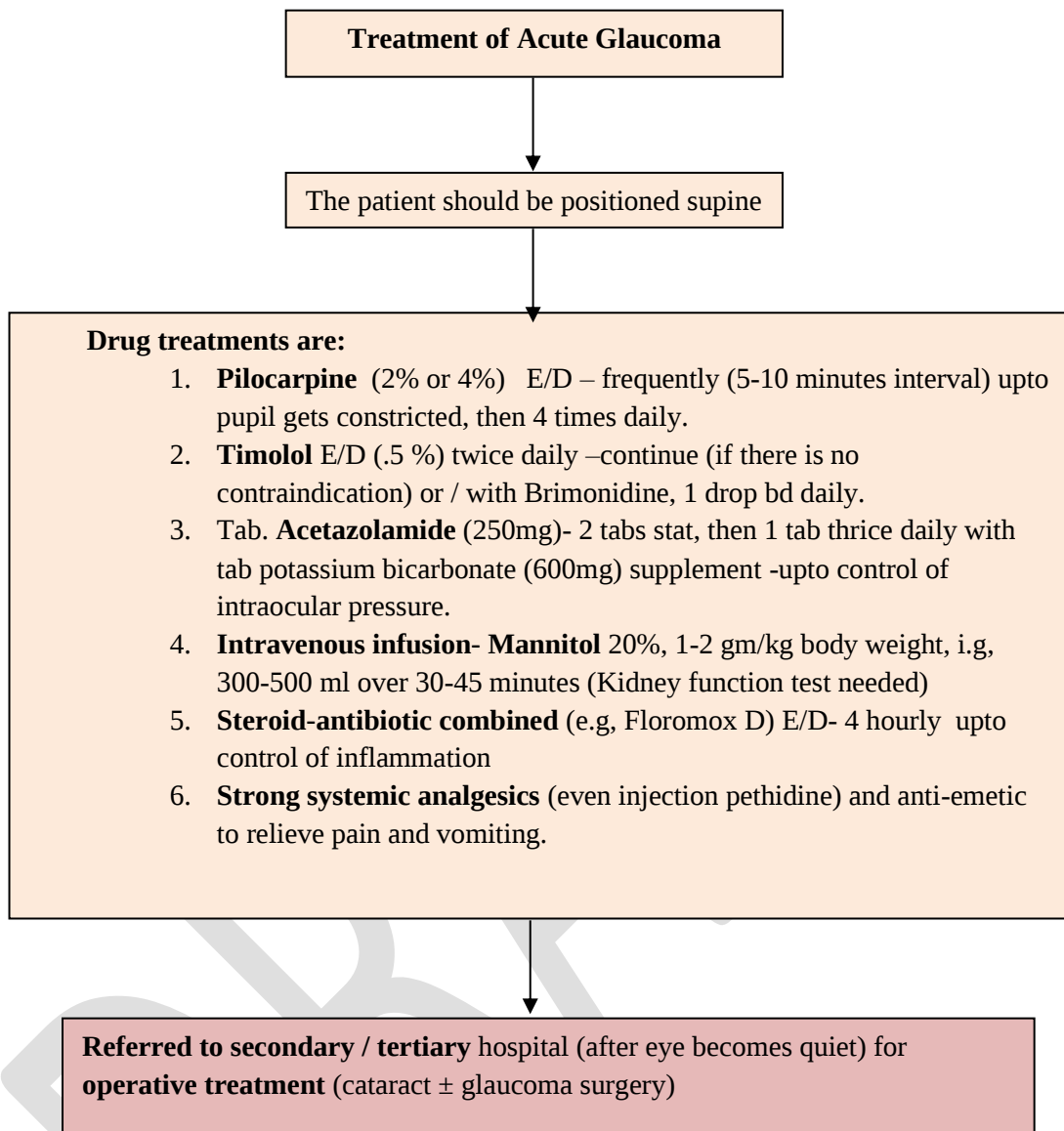
Acute Dacrocystitis



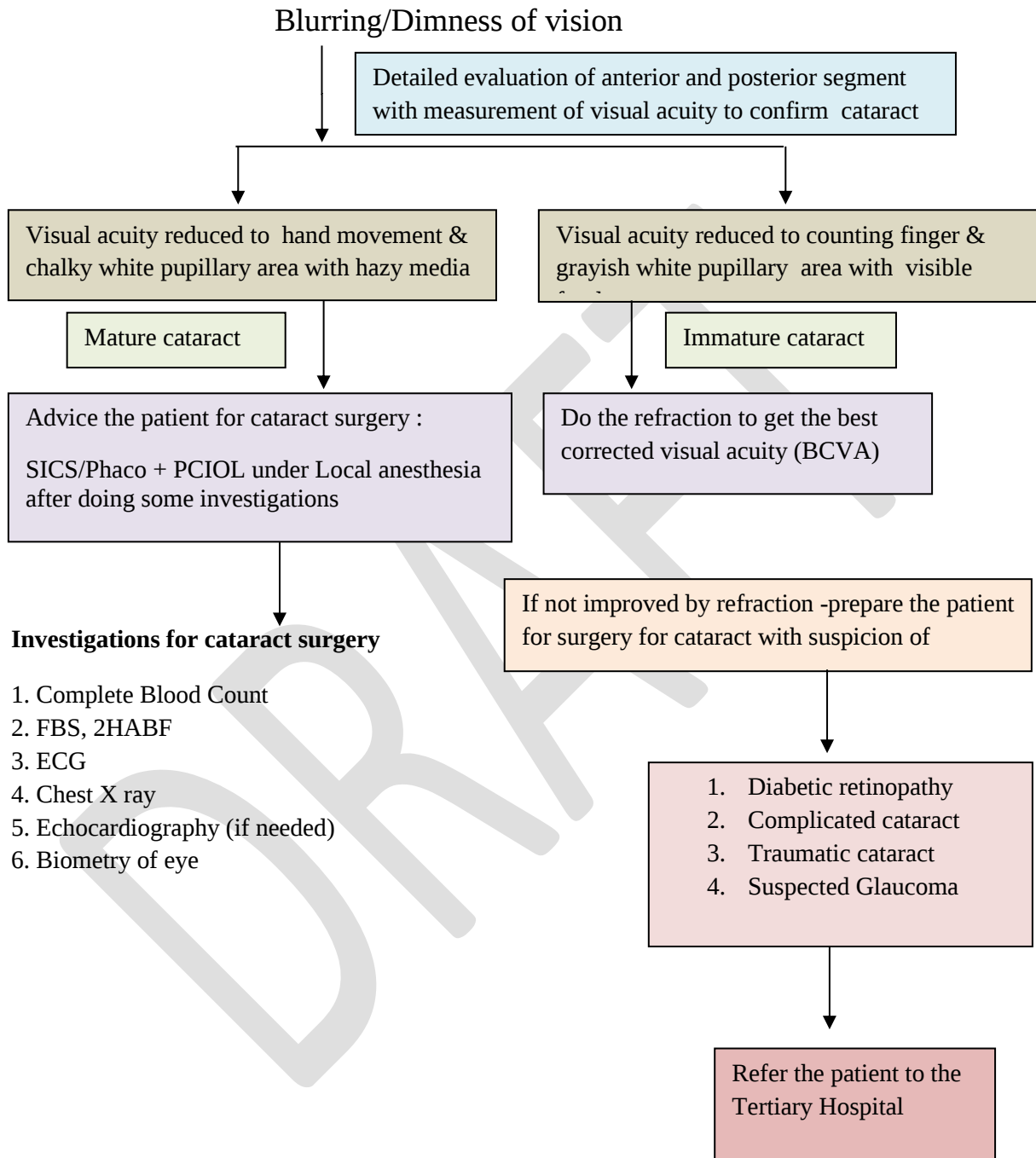
Acute Glaucoma

It is a sight-threatening ocular emergency





Cataract (age related cataract)



Corneal Ulcer

Breach of continuity of the corneal epithelium superadded with organismal invasion

Keratitis: Inflammation of the cornea.

Symptoms: Pain, redness, watering, photophobia, white spot on the cornea, decreased vision with short duration

Diagnosed by detailed history and evaluation of anterior segment with slit lamp

Clinical Types & Symptomatic Assessment:

1. **Bacterial Infection**-Redness, watering & discharge.
2. **Viral Infection**- Redness, watering & severe photophobia
3. **Fungal Infection**- Redness, watering, discharge & H/O agricultural trauma (specially in harvesting season)

Clinical signs:

1. Lid edema
2. Circumciliary congestion
3. Corneal epithelial defect with infiltrate
4. Dendrite or punctate shaped lesions (in viral keratitis)
5. Dry, cheesy, grayish white infiltrate with feathery margin (in fungal keratitis)
6. Satellite lesions (in fungal keratitis)
7. Anterior chamber reaction present
8. Hypopyon (yellowish white colour & water level present- in bacterial corneal ulcer; thick, cheesy and no water level- in fungal corneal ulcer)

Clinical Tests: Clue for diagnosis:

1. Corneal sensitivity diminished -- (in favour of viral corneal ulcer).
2. Corneal smear with 10% KOH (+) ve - (in favour of fungal corneal ulcer)
3. More symptoms, less signs-- (in bacterial corneal ulcer) (patient looks very ill)
4. Less symptoms, more signs- (in fungal corneal ulcer) (patient not worried, not anxious)

Treatment

A. Bacterial Corneal Ulcer

1. **Intensive broad-spectrum topical antibiotic therapy:** Dose depends on severity of ulcer
 - **Monotherapy** with a Fluoroquinolone (Moxifloxacin / Levofloxacin / Gatifloxacin / Besifloxacin)
 - **Dual therapy** Combination of two antibiotics. For Gram-negative organisms- Gentamicin, Tobramycin etc & for Gram-positive organisms- Ciprofloxacin, Cephalosporin
 - **Topical fortified** (concentrated) drops, e.g, Fortified Gentamicin / Tobramycin 15 mg/ml or Fortified Cefuroxime / Cefazolin / Ceftazidime 50 mg/ml are most effective for moderate to severe cases
 - **Sub-conjunctival Injections** may be also given for moderate to severe cases. It may be mixed with injection Atropine. Gentamicin (20-40 mg) is usually preferred. Injections are given every 24 hour for about 5 days.
2. **Atropine (1%) E/D-** 1 drop 2-3 times daily
3. **Systemic Analgesic** like Diclofenac/Naproxen with anti ulcerant
4. **Anti-glaucoma medication-** if necessary.

B. Fungal Corneal Ulcer

1. **Local antimycotics-** Natamycin (eg. N Mycin/ Natoph) 5% one hourly, then tapered according to response
2. **Systemic antimycotics:** eg. Tab Ketoconazole/Fluconazole 200 mg b.i.d (in normal liver function)
3. **Atropine (1%) E/D** one drop 8 hourly
4. **Analgesics and anti-glaucoma medication,** if needed

C. Viral Corneal Ulcer

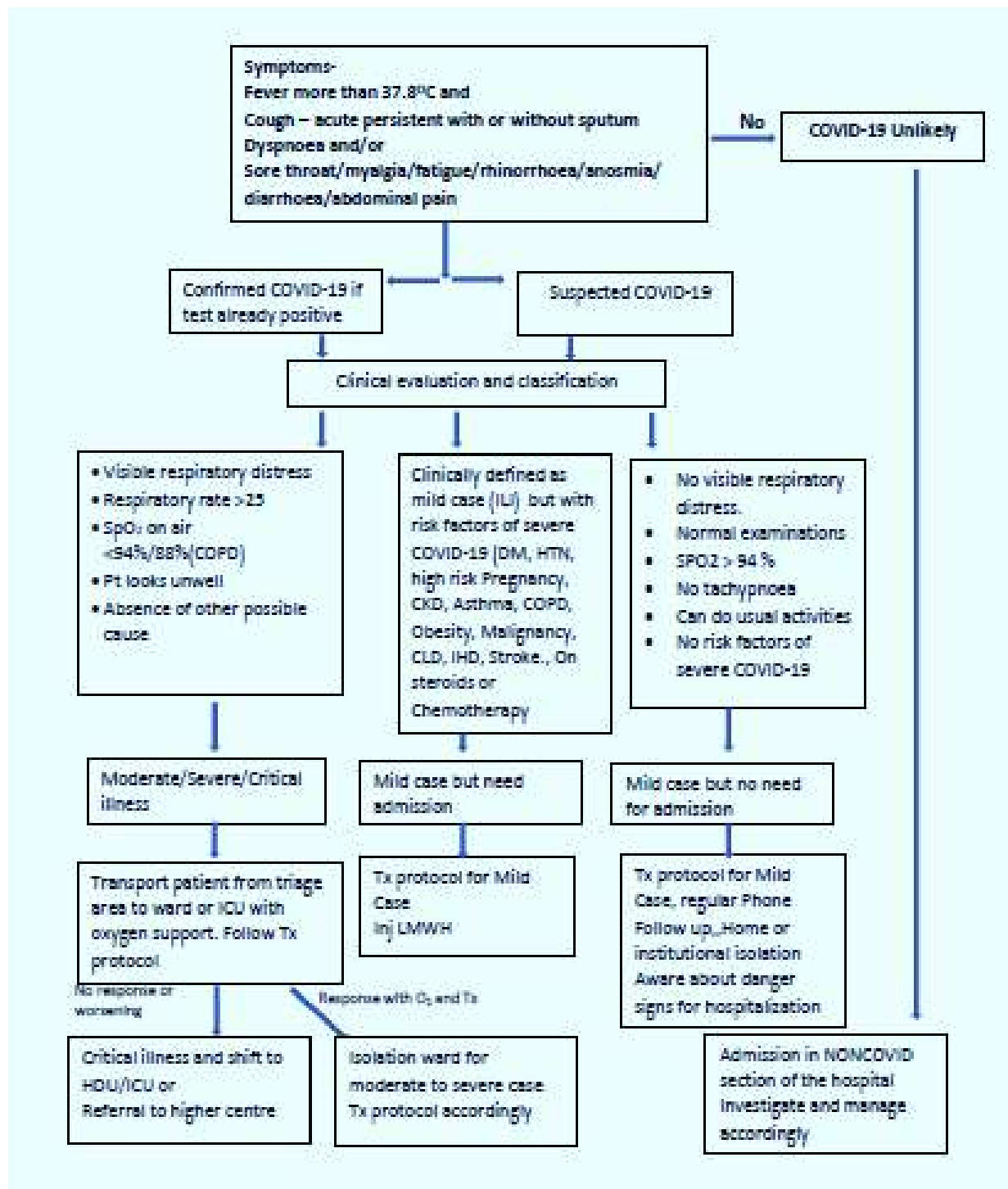
1. **Topical antiviral** - Acyclovir 3% (Clovir) or Ganciclovir 15 % (Xoviral) eye gel- 5 times a day for 4 weeks
2. **Artificial tear** (e.g, Sinafresh Liquigel) - 6 times daily for 8 weeks
3. **Mild Steroid** eye drops (e.g, Flurometholone E/D) (e.g, AFM) if no superadded infection- 4 times daily for 4 weeks
4. Use of **Photo-sunglass**
5. **Antibiotic**-If superadded infection- Moxifloxacin E/D (e.g, Moxigen) -4 times daily for 2/3 weeks (before steroid use).
6. **Vitamin C**-Tab. Vit-C- 12 hourly for 2 weeks.
7. **Systemic antiviral**- Tab. Acyclovir 800 mg five times daily or Valcyclovir 1gm for 5-7 days should be given in case of Herpes Zoster virus involvement
8. **Systemic steroids** to reduce severity of post herpetic neuralgia, optic neuritis, cranial nerve palsy in case of Herpes Zoster Ophthalmicus

Note1: For all types of corneal ulcer, if medical treatment is non-responding & impending to perforation, surgery may be needed (in referral hospital) like-

- Tarsorrhaphy (temporary or permanent)
- Cauterization
- Conjunctival hooding
- Corneal debridement
- Tissue adhesion by cyanoacrylate glue with bandage contact lens (BCL)
- Keratoplasty (therapeutic)

Note2: For eye disease management (both medical and surgical), support services may be taken freely from targeted upazila/district hospitals, where National Eye Care (a priority based project of DGHS) facilities are available

Coronavirus Disease-2019 (COVID-19)



Source: National Guideline Version 09, page 24

1. Treatment

- a. Mild case (with no significant co-morbidity): at home or isolation ward
 - i) Symptomatic treatment only with paracetamol if temperature 101°F or more; antihistamine if rhinorrhea; antitussive if dry cough
 - ii) Isolation, rest, nutrition, monitor for alarm symptoms (respiratory distress: respiratory rate >24 or SPO₂ < 94%, worsening cough and fever, altered mental status, extreme lethargy or unable to proper talk)
 - i) Ivermectin, Favipiravir, any form of thromboprophylaxis, vitamins, antibiotics and other respiratory medications are not recommended
- b. Mild COVID 19 cases with risk factors:
Above + Enoxaparin 40 mg, SC, once daily (for obese patients, 40 mg BID). Adjust dose when CrCl < 30ml/min or start Unfractionated heparin 5000 unit SC /day.
- c. Moderate case:
 - i) Mild symptomatic Treatment Protocol, Plus
 - ii) Oxygen through nasal canula (Maximum 5 L/min) if required.
 - iii) Prone position at least 4-6 hrs/day
 - iv) LMW heparin Inj Enoxaparin 1mg/kg SC twice daily/ day (dose adjust with CrCl < 30ml/min). If LMWH cannot be given or contraindicated:
 - i. Inj Unfractionated heparin (UFH):
 - 1. 60U/kg bolus+12units/kg/hr infusion-for ACS
 - 2. 80U/Kg bolus +18units/kg/hr infusion-for VTE and AF
 - ii. Thromboprophylaxis should be given until symptom resolves or improves and followed by Tab rivaroxaban 10 mg once daily for 1 month
 - v) Antiviral: For moderate to severe cases who need oxygen therapy and/or are hospitalized, Inj Remdesivir has been advocated.
 - i. Dosage of Remdesivir: 200 mg IV infusion (within 30 min-2 hours) on Day 1 followed by 100 mg infusion (within 30 min to 2 hours) from Day 2 to Day 5.
- Remdesivir should be used at the discretion of consultant working in the hospital.
- vi) Any Moderate case on treatment – if no response or deterioration at 24 hours in hospital: Oral Dexamethasone 6 mg/day in single or two divided dose for 10 days
- d. Severe case:
 - i) Oxygen therapy as required escalating from nasal canula (5L/min max.) to non-rebreather face mask (15L/min max.); then HFNC.
 - ii) Inj. Dexamethasone 6mg I.V. daily for 10 days
 - iii) Thromboprophylaxis as above
 - iv) Anti-viral as above
 - v) Broad spectrum antibiotics at the discretion of consultant working in the hospital.
 - vi) Consultant may consider Tocilizumab or Baricitinib where appropriate

2. Indications for referral

- i) Severe and Critical COVID-19
- ii) Respiratory distress (not due to over hydration) [ARDS].
- iii) Persisting oliguria even after correction of dehydration.
- iv) Multi organ failure.
- v) Active bleeding.

Any serious Cardiovascular or Cerebrovascular disease (MI, stroke etc).