Precautions (A.C.D.S.)

<u>Airborn Precautions (Surgical Mask – N95, Private Room)</u>

Measles / Rubeola (Koplik Spots)

Tuberculosis (maculopurulent)

Vericella Chicken Pox

Vericella Zoster/Herpes Zoster/Shingles

SARS (Severe Acute Respiratory Syndrome)

Contact Precautions (Private Room)

Scabies

Herpes Simplex

Infections of major wounds

VRE (Vancomyacin Resistant Enterococcus)

Enteric Pathogens

Clostridium Difficile

E. coli

Gardiasis

Rotavirus

A & E hepatitis with poor hygene

Shigella

Simonella

RSV (Respiratory Synctal Virus) / Bronchiolitis

Shingles

Pinworm / Enterobiases

Pediculosis Capitis (Lice)

Impetigo

MRSA (Methicillin Resistant Staphalococcus Aureus)

Conjuntivitis

Droplet Precautions (Private Room)

Diptheria

Rubella

Roseola / Erythema Sobitum

Fifth's Disease / Erythema Infectiousum / Parvovirus

Pertussis / Whooping Cough

Pneumonia

Influenza / Epiglotittis

Measles

Mumps / Parotitis / Paroxymyx Virus

Scarlet Fever

Staphalococcus Pneumonia

Standard Precautions (Private Room)

Hepatitis

AIDS

Infectious Mononeucleosis / Kissing Disease

Legionnaires Disease (Opportunistic: Need dedicated equipment in room)

STD's (Gonorrhea, Syphilis, Chlamydia)

Lyme Disease

Eczema

PCP (Pneumocystic Carnii Pneumonia) (Opportunistic: Need dedicated equipment in room)

Psoriasis

Tinea Capitis

Karposi's Sarcoma (Opportunistic: Need dedicated equipment in room)

Rocky Mountain Spotted Fever

<u>Airborn Precautions</u> – Droplet organism very tiny capable of staying in air to infect others.

- 1. Private Room, negative pressure, vent outside of building, 6-12 air exchanges, UVLight, Door Closed
- 2. Wear N95 mask when entering room, particulate respirator mask, surgical mask.
- 3. When client leaves room client wears surgical mask.
- 4. Cohort only with same organism.
- 5. PPE when necessary.

Contact Precautions – organism acquired by touching.

- 1. Private Room
- 2. Gloves & Gown when in contact with client
- 3. PPE when necessary.
- 4. Cohort only with same organism.

<u>Droplet Precautions</u> – large droplet organism infects only within 3-6 feet.

- 1. Private Room, Door open, OK.
- 2. Wear mask when entering room.
- 3. Client wear mask when leaving room.
- 4. Cohort only with same organism.
- 5. PPE when necessary.

<u>Standard Precautions</u> – promotes hand washing and use of PPE (eg mask, eye protection & gown) when appropriate for client.

Apply to all blood and body fluids, non intact skin and mucus membranes.

Use needless devices when appropriate, dispose of sharp instruments in puncture proof container.

Don't recap dirty needles. Clean all blood spills with bleach.

Antipsychotics / Neuroleptics

End in "ine"

A neuroleptic is used to treat schizophrenia

Thorazine

Haldol

Inapsrine

Risperdal

Meldaril

Olanzepine

Stellazine, Seroquel, Serintil

Sx: Anticholinergic – Dry symptoms, dry eyes, blurred vision, constipation, urinary retention.

TE: Increase fluids, increase fiber, increase exercise.

Can cause blood dyscrasia – sore throat, fever, malaise, bleeding.

AE:

Photosensitivity

Orthostatic Hypotension

Blood Dyscrasia

Anticholinergic

Galactorrhea

EPS – Extra Pyramidal Symptoms

Pseudo Parkinsonian

Akathesia – inability to remain motionless (constantly moving)

Dystonia – tortion or twisting of body parts.

Tardive dyskinesia – tounge slapping, inability to perform voluntary muscle movements.

EPS + Fever = NMS (Neuroleptic Malignant Syndrome)

Causes are sudden decrease or change in **THIRMOS** drugs.

Tx:

Akineton

Parlodel Parlodel

Artane (trihexyphenidyl HCl)

Cogentin

Kemadrin

N&V

Vomiting, Anorexia, Nausea, Diarrhea

AE:

Anti Depressants Tricyclic Antidepressants Tofranil **A**nafranil Prozac – not a tricyclic **E**livil Wellbutrin Zyban AE: **P**hotosensitivity Orthostatic Hypotension **B**lood Dyscrasia Anticholinergic (most common) **MAOI P**arnate **N**ardil Marplan TE: Avoid foods rich in tyramine. Processed foods, cheese except cottage cheese, papayas, bananas, avocados, alcohol. Sx: Headache **HTN** Tachycardia

<u>SSRI</u>

Paxil

Prozac

Serzone

Zoloft

Anti-alytic / Anti-anxiety

Valium

Ativan

Librium

Xanax / Alprazolam

Anti-manic

Lithium

Given for Bipolar Disease

AE:

Vomiting

Anorexia

Nausea

Diarrhea

Tremors

Ataxia

Polyuria

Tx: increase sodium, increase fluids, take oral contraceptives, do not use diuretics.

TB Hepatotoxic

```
Rifampin
       Inh – take with B6 to prevent peripheral neuritis.
       Pyrazinamide – PZA
       Elivil
       Streptomycin – (both nephro and ototoxic)
Drugs that turn urine red/orange
       Dilantin
       Rifampin
       Macrodentin
       Pyridium
PPD – Acid Fast Bacilli Test for TB has to be positive 3x. Check results 48-72 hours later.
       Wheal
       Induration
       Swelling
       Elevation
Sx: TB
       Maculopurulent Sputum (bloody sputum)
       Anorexia
       Night Sweats
       Generalized Weakness / Fatigue
       Low grade fever
```

Hepatotoxic Drugs

Psychotics Anticoagulants* S anti-seizure **TB** Medications Acetamenophen / Tylenol L anti-Lipids Alcohol & Aventil **N**ifedipine Anticoagulants*: Fragman Aggrenox **Ticlid** Coumadin Heparin Integrilin Lovenox Dipyridamole **A**spirin **P**lavix Signs of Liver Toxicity / Hepatotoxicity Jaundice **Pururitis** Pale colored stools Steatorrhea Dark colored urine

Respiratory Drugs

<u>Anticholinergics</u> – block parasympathetic nervous response. Atrovent / Inatropin Bromide SE: Vomiting **A**norexia Nausea **D**izziness AE: **Tremors T**achycardia Restlessness **A**pprehension **I**rritablility Nervousness Beta Receptor Agonist "EROL" ending. Metaperenerol (Alupent) Albuterol (Proventil, Venteril) Levalbuterol (Xopenex) Terbutaline (Brethine) – given to pregnant women to delay labor. Broncho Dialators – give before ADL's Tx: activity induced asthma (xandine drugs) Aminophylline Theophylline (10-20 is therapeutic range), take with food.

Glucocorticoids (inhalers)

Beclamethasone

Fluconasone

TE: If no spacer then 1-2 inches from mouth. If spacer, then make sure they have a tight seal. Rinse mouth after each dose to prevent thrush. (Cushing Symptoms).

Leukotriene inhibitors

TE: Take daily dose at HS (Bedtime)

Montelukast (Singulaire)

Zafirlukast (Accolate)

Mast Cell Stabilizer

Cromylin Sodium (Intal) – Not effective during onset of asthma attack. Maintenance dose for COPD and Asthma.

Patients with COPD need daily Peak Flow Rate.

Green Zone 80-100%

Yellow Zone 60-80% - pt needs to take meds within 2-3 hours then call M.D.

Red Zone less than 60%, take meds then go to ER.

HIV AIDS

Viraimmune – take on time "Do Not Skip"

AZT "Retrovir" take on empty stomach.

Vivacept "use contraceptives" (causes birth deformities)

Gancyclovier

Acyclovir

Zidovidine – "ZVD" to prevent neonate transmission. Given after 14 weeks gestation. IV during labor and in the form of syrup to neonate for 6 weeks after delivery.

Patient can deliver natural childbirth but cannot breast feed. Patient cannot receive live vaccines (ex OPV, MMR)

HIV Test to confirm infection:

ELISA – Enzyme Linked ImmunoSorbent Assay – A single reactive result does not confirm alone. Need a second ELISA.

Western Blot / IFA – Test for the presence of antibodies.

CD4 (lymphocyst) count – Above 400 not concerned, Below 400 concerned.

Viral load testing – measures the presences of HIV viral genetic material "RNA"

TE:

No fresh fruit

No fresh flowers

No raw meats

Stay away from cat litter "toxoplasmosis"

Stouvadine (D4T Zerit) is used for patients that don't respond / tolerate conventional therapy.

AE: Peripheral Neuropathy, Monitor gait, Add paresthesia.

Respiratory Ventilators – Causes of Ventilator Alarms

Low Pressure

Patient stops breathing spontaneously

Disconnection or Leak

Leak in the vent or patient airway cuff

High Pressure

Increased secretions or mucus plug

Wheezing

Endotracheal tube displacement

H₂0 in the tube

Kink in the tube

Patient biting, coughing, or gagging on the tube.

Anxiety or fighting vent.

Modes of Ventilation:

<u>SIMV – Synchronized Intermittent Mandatory Ventillation</u> – Allows patient to breathe on their own between ventilator breaths. (Ex. 8 breaths from patient, 8 breaths from vent). Used to wean patient off of ventilator.

<u>Assist Control</u> – most commonly used mode. Ventilator is breathing for client if client does not initiate breath.

<u>PEEP Positive End Expiratory Pressure</u> – to prevent closure of alveoli. Keep them open to prevent atelectasis.

<u>Controlled Ventilation (CV)</u> – clients who are unable to initiate a breath . GB, TB, Polio, Total dependence on ventilator setting.

Forms of O₂ Masks:

Non-rebreather mask – provides increased concentration of O_2 90-100% on expiration. Bag does not deflate.

Ventri Mask – delivers concentrated form of O_2 40-60%. Used for short term emergencies.

Renal System and Drugs

Nephrotoxic

Aminoglycosides "Nycin"

Dye IV (angiogram)

Antifungal

Contraindicated in Renal Failure

ACE Inhibitor – check creatinine

Aldactone – check K⁺

MOM – check Mg⁺

Dialysate Solution Contents:

- 1. Albumen
- 2. Glucose
- 3. Insulin
- 4. Heparin
- 5. Electrolytes

End Stage Renal Disease (ESRD)



Avoid NSAID's

Renal Drugs

- 1. Colace (laxative)
- 2. Drugs to lower Phosphorus (↑ Calcium)
 - Renagel (Sevelormer)
 - Os-cal (Calcium Carbonate) Take with meals.
 - Phoslo (Calcium Acetate) Take with meals.
 - Aluminum Oxide (Amphogel) Take with meals.
 - Colace (Stool Softener
- 3. Drugs for Anemia
 - a. Procrit
 - b. Epoeiten (Epogen)
 - c. Folic Acid
 - d. Feosol (Iron)
- 4. To Prevent GI Bleeding
 - a. H₂ Blockers
- 5. Drugs for UTI / Cystitis
 - a. Bactrim (Sulfa /TMT)
 - b. Fluro-quinolone (Ofoxacin)
 - i. Levofloxacin
 - ii. Ciprofloxacin
 - c. Macrodentin
 - d. Pyridium
- 6. Drugs for ICP patients
 - a. Mannitol
 - b. Steroids with anti-ulcer
 - c. Anti Seizure meds (See 11 Neuro Drugs)
- 7. Drugs for Renal Transplant
 - a. Steroids for life
 - b. Immunosuppressants
 - i. Imuran (Cyclosporine)
- 8. Drugs for BPH (Benign Prosthetic Hyperplagia)
 - a. Flomax (Tamsulosin) Take with a full glass of water.
 - b. San Palmetto / Saw Palmetto
 - c. Alpha Receptor
 - d. Proscar
- 9. Drugs contraindicated for BPH (Benign Prosthetic Hyperplagia) Patients
 - a. Anticholinergics
 - i. Atropine
 - ii. Probantine / Ditropan
 - b. Antihistamines (nasal decongestants) with pseudophedrine.

Urinary Diversion Techniques

Ileal Conduit

No risk for fluid and electrolyte imbalance Continuous drainage Drain bag needed @ all times Stoma Care

Koch Pouch

Internal Ileal Conduit Self Catheter, bladder training Neobladder

Nephrotomy

Connected directly to kidney
Continuous drainage
In AM attach "saddle" bags, pouch attached to thigh.
In PM drain into foley bag during HS.

TPN

Contents of TPN:

Lipids

Insulin

Vitamins

Electolytes

Carbohydrates

 H_20

Heparin

Amino Acids

Minerals

Complications of TPN:

- 1. Air Emboli related to tubing / disconnection of tubing
 - a. Tx: Clamp tubing, place on left side lying and call M.D.
- 2. Pneumothorax Puncture from insertion of central line.
- 3. Infection
 - a. Tx: To prevent use sterile dressing site change q 48h
 - b. Solution IV tubing change q 24h
- 4. Hyperglycemia Dry and Hot Give a Shot
 - a. Causes
 - i. Infusion of TPN too rapidly
 - ii. Not enough insulin
 - iii. Infection
 - b. Tx:
 - i. Slow infusion rate
 - ii. Administer regular insulin
- 5. Hypoglycemia Cold and Clammy Give Some Candy
 - a. Causes
 - i. Abrupt discontinuation or too much insulin
 - b. Tx:
- i. ↓ flow of TPN
- ii. Run D₁₀W
- iii. ↓ insulin
- 6. Hypervolemia Fluid overload
 - a. Tx:
 - i. ↓ TPN Flow Rate
 - ii. Administer diuretics

Neurological Drugs

Learn Neurological Disorders and their symptoms (Parkinson's, Guillian Barre, ALS, MS).

- 1. Mannitol
- 2. Steroids "Sone"
- 3. Antacids, PPI (Proton Pump Inhibitor), H₂ Blocker, PGI (Prostiglandin Inhibitor)
- 4. Anti-seizure Meds Cause blood dyscrasia (sore throat, fever, bleeding, malaise).
 - a. Benzodiazepines
 - i. Valium
 - ii. Ativan
 - iii. Librium
 - iv. Xanax / Alprazolam
 - v. Clonazepam
 - b. Depakote (Valproic Acid)
 - c. Carbamazepine (tegretol)
 - d. Keppra
 - e. Neurontin
 - f. Dilantin (Phentoin)
 - g. Lamictal
- 5. SCI (Spinal Cord Injury) drugs
 - a. Stool Softener
 - b. Muscle Relaxants (VALX)
 - c. Steroids "Sone"
- 6. Anti-hypertensives for autonomic dysreflexia
 - a. Isosorbide Dinitrole
 - b. Isosorbide Mononitrate
 - c. Nitro (Paste)
 - d. Nitro (Patch)
- 7. Antiviral (encephalitis)
 - a. Acyclovir
- 8. Anticholinesterase (MG)
 - a. Neostigmine
 - b. Pyridostigmine
 - c. Physostygmine
 - d. Edrophonium Chloride (tensilon) Test for MG.
 - i. In MG, muscle strength will improve immediately after injection of tensilon.
- 9. Atropine Sulfate cholinergic crisis
- 10. Anti Parkinson Drugs
 - a. Levadopa
 - b. Amantidine (Symmetrel)
 - c. Carbidopa (Sinemet)
 - d. Comtan
 - e. Eldepryl

- 11. Anti EPS (Extra Pyrimidal Symptomes)
 - a. Akinton
 - b. Parlodel
 - c. Artane (trihexyphenidyl HCl)
 - d. Cogentin
 - e. Kemadrin
- 12. Drugs for MS
 - a. Steroids
 - b. Muscle Relaxants
 - i. Baclofen
 - ii. Valium
 - iii. Flexoril
 - iv. Soma

Neurological Disorders (GB, ALS, MG, MS, Parkinsons)

Guillain-Barré Syndrome (GB)

Acute infectious neuritis of the cranial and peripheral nerves.

Recovery can take years

Reversible

NurDx: Impaired breathing pattern.

Ascending paralysis (starts from the lower extremities and goes up)

Sx: Paresthesia

Weakness of the lower extremities

Progressive weakness of the upper extremities and facial muscles

Tx: Monitor respiratory status

Monitor for autonomic dysreflexia

Monitor for impaired mobility

Monitor cardiac status

Assess for gag reflex

Avoid infection

Plasmaphoresis, immunoglobulin

Prepare to initiate respiratory support $(0_2$, ventilation, incentive spirometer).

Amyotrophic Lateral Sclerosis (ALS)

Lou Gehrig's Disease

Progressive degeneration of the motor system that causes muscle weakness and atrophy.

Irreversible

NurDx: Impaired Respiratory Pattern

Sx: Difficulty chewing

Dysarthria

Dysphagia

Dysphonia

Tongue Atrophy

Weakness of the hands and feet

Tx: Monitor respiratory status

Monitor for autonomic dysreflexia

Monitor for impaired mobility

Monitor cardiac status

Assess for gag reflex

Avoid infection

Plasmaphoresis, immunoglobulin

Prepare to initiate respiratory support $(0_2$, ventilation, incentive spirometer).

Myasthenia Gravis (MG)

Not enough acetylcholine at the myoneural junction. Defect in the transmission of nerve impulses (Acetylcholine is the excitatory impulse).

Dx: Impaired breathing r/t respiratory paralysis and failure. (Decending disease).

Sx: Diplopia

Dysphasia

Difficulty Chewing
Difficulty Breathing

Diminished Breath Sounds

Ptosis Weakness

Weak Hoarse Voice

Fatigue

Tx: Monitor respiratory status

Monitor for autonomic dysreflexia Monitor for impaired mobility

Monitor cardiac status Assess for gag reflex Avoid infection

Plasmaphoresis, immunoglobulin

Prepare to initiate respiratory support $(0_2$, ventilation, incentive spirometer).

Multiple Sclerosis(MS)

Demyelenation of the neurons. Chronic progressive disease of the CNS. Sensory Motor loss.

Dx: Potential For Injury

Sx: Bladder, Bow, and Sexual Dysfunction

Blurred Vision

Decreased Sensory Perception (touch, pain, temp)

Diplopia Dysphagia

Emotional Changes (Depression, Euphoria, Apathy, Irritability)

Fatigue

Nystagmus

Tremors, Ataxia

Weakness

Tx: Stationary exercise, swimming, cycling. Space exercise apart. ↑ Fluids before exercise. Bowel regimen.

Parkinson's Disease

Not enough dopamine at the receptor sites to inhibit the excitatory impulses. This results in a dysfunction of the Extrapyramidal System (EPS) and crippling disability.

Dx: Potential for Injury

Sx: Blank facial expression

Bradykinesia Broad based gait

Drooling Dysphagia

Difficulty Swallowing

Handwriting becomes smaller – micrographia Involuntary Tremors / Pill Rolling Tremors

Monotonous Speech Muscle Rigidity

Stooped shoulders / shuffling gait

Walk with broad based gait

Tx: Anti-parkinson drugs

Levadopa Amantidine Carvedopa Eldepryl

Comtan

Ae: Confusion, Depression, Sleep Alteration

Musculoskeletal Drugs

- 1. Herniated Intervertebrae
 - a. Muscle Relaxants
 - i. AE: Drowsiness /Sedation
 - 1. Soma
 - 2. Baclofen
 - 3. Flexeril
 - 4. VALX (antialytics)
 - b. Steroids "Sone"
 - c. Pain Meds
 - i. ASA (Aspirin)
 - ii. NSAIDS
 - iii. Narcotics
- 2. Osteoporosis
 - a. Teaching ABCDEFGH
 - i. Alcohol
 - ii. Bone density
 - iii. Calcium
 - iv. D Vitamin D
 - v. Exercise
 - vi. FACEC
 - vii. Gain Weight
 - b. Drugs
 - i. Fosamax take with full glass of H_20 .
 - ii. Actonel
 - iii. Calcitonin
 - iv. Evista
 - v. Calcium Carbonate
 - vi. HRT ex Premarin
 - c. If patient is at risk for Osteoporosis then take these medications
 - i. Dilantin
 - ii. Heparin
 - iii. Lasix
 - iv. Steroids
 - v. Synthroid
- 3. Osteoarthritis Meds
 - a. NSAIDS
 - i. Feldene
 - ii. Ibuprofen
 - iii. Indomethacin
 - iv. Naproxen
 - b. Aspirin
 - c. Steroids
 - d. Muscle Relaxants

4. Gouty Arthritis

- a. Drugs
 - i. Colchicine
 - ii. Allopurinol
- b. AE:
 - i. Vomiting
 - ii. Anorexia
- c. Paget's Disease / Osteitis Deformus
 - i. Fosamax
 - ii. Actonel
 - iii. Calcitonin
- 5. Fibromyalgia
 - a. Antidepressants
- 6. SLE (Systemic Lupus Erythematosus) Meds
 - a. Darvocet
 - b. Tylenol 3
 - c. Oxycodone
 - d. Fentanyl
- 7. Scleroderma
 - a. Penicillamine
 - b. Azathioprine
 - c. Methotrexate
- 8. Polyarthritis Dodosa
 - a. Steroids 'Sone"
- 9. Rheumatoid Arthritis
 - a. Sedimentation Rate is ↑
 - b. Tx
- i. Gold Salts
- ii. Monitor for Blood Dyscrasia check CBC.

Endocrine Drugs

- 1. Growth Hormone
 - a. Somotropin
- 2. <u>Drugs for Hyperthyroidism</u>
 - a. PTU (Propyl thiouracil) = blood dyscrasia
 - b. Tapazole
 - c. Beta Blockers (\pmuHR)
 - i. Propanolol
 - d. Sedatives VALX
 - e. KISS
 - i. K Potassium
 - ii. Iodine
 - iii. Saline
 - iv. Solution Lugol's Solution
- 3. Drugs for hypothyroidism
 - a. Synthroid (Livothyroxin)
 - b. Cytomel (Liothyronine T3)
- 4. Parathyroidectomy
 - a. Calcium Gluconate at beside
- 5. Addison's Disease
 - a. Prednisone
 - b. Deltisone
 - c. Dexamethasone
 - d. Fluticasone
 - e. Hydrocortisone
 - f. Meythylprednisone

Other Names

- a. Corticosteroids
- b. Glucocorticoids
- c. ACH Hormones
- d. Mineral Corticoids contraindicated in patients with PUD (Peptic Ulcer Disease) /GI irritant.
- 6. <u>Cushing's Disease Diuretics</u>
 - a. Potassium sparring
 - i. Spironolactone
 - ii. Amiloride
 - iii. Triamterene

Gastrointestinal -GI

- 1. Upper and Lower GI Series
 - a. Laxatives
- 2. EGD, ERCP
 - a. Xylocaine Spray
- 3. Colonoscopy
 - a. Laxative Golytely (Mix 4L tap H₂0 with 1 glass every hour)
- 4. Cholecystography
 - a. Iapanoic tabs (6 telepaque tabs. 1 tab q 5 min with full glass of water)
- 5. Liver Biopsy
 - a. PASTALA
- 6. Drugs for peptic ulcer disease (PUD)
 - a. Antacids (Maalox /TUMS)
 - b. H₂ Blockers end in "tidine"
 - i. Ramitidine
 - ii. Cemetidine
 - iii. Famitidine
 - iv. Mizatidine
 - c. Proton Pump Inhibitors (AE: VAND + Headache) end in "Prazole" PPI
 - i. Pantaprazole
 - ii. Omeprazole
 - iii. Lansoprazole
 - iv. Esomeprazole
 - d. Proton Inhibitor PI
 - i. Cytotec (Mysoprostol) can cause abortion.
 - e. Sucralfate (carafate) coats lining.
 - f. Reglan (metoclopramide) 30 min AC.
- 7. Drugs for Ulcerative Colitis
 - a. Steroids
 - b. Albumen
 - c. Antidiarrheal (Lomotil, Immodium)
- 8. Drugs for Hemorrhoids
 - a. Colace
 - b. Metamucil Drink with a full glass of water and follow up with another.
 - c. Senokot
- 9. Cholecystitis
 - a. Demerol (Avoid MS)

10. Liver Cirrhosis

- a. Vit K
- b. Portal Systemic Encephalpathy
 - i. Neomycin Sulfate
 - ii. Lactulose
 - iii. Aldactone
 - iv. Vitamin K
 - v. Anti Pruritic (Benedryl)
 - vi. Neomycin
 - vii. Anti-emetics
 - viii. Vitamin Supplements
 - ix. Antacids

Avoid PASTALAN and Sedatives / Narcotics

- 11. <u>Pancreatitis</u> Do not give morphine.
 - a. Antacids
 - b. H₂ Blockers
 - c. PPI
 - d. Prostiglandin Inhibitors PGI
 - e. Demerol

12. <u>Complications / Seizures</u>

- a. Sedation / Anti-seizure
 - i. Phenobarbitol sedation / anti-seizure
 - ii. Anti-anxiety
 - iii. Mg MSO₄
 - iv. B₁ Thiamine
- b. Pancreatic Enzymes
 - i. Viokase
 - ii. Pancrease

13. Hepatitis Vaccination

a. Immunoglobulin

<u>H2 Blockers</u> \downarrow HCL \rightarrow Never take it together with Iron (Fe), antibiotics, antacids, give 2 hrs apart.

- 1. Zantac
- 2. Tagamet
- 3. Axid
- 4. Pepcid

$\underline{PPI} \downarrow HCL$

AE: VAND + Headache: coats lining of stomach (Sucralfate, Carafate). End with "Prazole".

- 1. Pantoprazole
- 2. Omezprazole
- 3. Lansoprazole
- 4. Esomeprazole

Contraindicated in PUD

- 1. NSAIDS could cause ↑ bleeding
 - a. Feldene
 - b. Naprexyn
 - c. Endomethacin
 - d. Ibuprofen
- 2. Anti-coagulants
- 3. Steroids
- 4. Thermolytics

Antacids Neutralize HCL, take 1-2 hours after meals

- 1. Maalox never take together with Fe Antibiotics
- 2. Tums $-H_2$ blocker, give 2 hours apart.

Prostiglandins: Cytotec (Mysoprostol) can cause abortion.

Vitamin B₁₂

B₁₂ (Cyanocobalamin) treats both Pernicious Anemia, Megaloblastic Anemia

Patient with total gastrectomy are at risk for \downarrow B₁₂ and anemia.

Give B_{12} injection IM q wk for 1 month then monthly for life.

Dx: Schilling Test

A Schilling test may be given in two parts. Part one measures the amount of vitamin B_{12} passed in urine after a known amount of the vitamin tagged with a radioactive substance is swallowed. If the intestines absorb vitamin B_{12} normally, a certain amount of the vitamin (up to 25% of the amount swallowed) will be passed in the urine. If the intestines cannot absorb the vitamin normally, very little or no vitamin B_{12} will be present in the urine.

A Schilling test with abnormal results (no vitamin B_{12} in the urine) may be repeated after giving an oral dose of intrinsic factor and radioactive B_{12} . This is called part two of the test, and it tells whether the vitamin deficiency is caused by a lack of intrinsic factor or from a problem with the intestines.

Why It Is Done

The Schilling test is done to:

Determine the cause of a low level of vitamin B_{12} .

Check for vitamin B_{12} deficiency anemia in people at high risk for developing this anemia, such as those who have had stomach or intestinal surgery, small intestine problems, or people with a family history of this anemia.

Help diagnose pernicious anemia, a serious blood disease caused by a lack of intrinsic factor.

Risk Factors for Colorectal Cancer

- 1. \uparrow in age over 40.
- 2. Family Hx of polyps
- 3. Previous colon cancer diagnosis
- 4. Hx of IBS (Irritable Bowel Syndrome)
- 5. Increase fat, protein, and ETOH intake. No Beef.

PUD / Gastric Ulcer Disease – is aggravated by food.

Sx: weight loss, patient eats small frequent meals

DUO / Duodenal Ulcer – food relieves pain.

Sx: Gain weight, pain at night.

Gerd and Hiatal Hernia – minimize liquid intake, no eating or drinking 2 hours before bedtime, decrease fat intake, increase fiber, avoid tobacco, caffeine, carbonated beverages. No tight close, elevate HOB 6-8 inches (don't lie down after eating.)

Colon

Ascending Colon: Ileostomy – liquid stools, no irrigation needed. Transverse Colon: Semi-formed stool Descending Colon: Colonoscopy / sigmoid colon Formed Stool Give Yogurt

<u>Dumping syndrome</u> – physiologic response to rapid emptying of gastric contents into the jejunum. Occurs in patients who have had partial gastrectomy and gastrojejunostomy.

Sx:

Nausea

Weakness

Sweating

Palpitations

Tachycardia

Syncope

Diarrhea

Preventing Dumping Syndrome in Tube Feeding

- 1. Slow the formula rate to provide time for the carbohydrates and electrolytes to be diluted.
- 2. Administer feedings at room temperature.
- 3. Continuous drip if tolerated instead of bolus feeding.
- 4. Semi-Fowlers position for 1 hour after feeding.
- 5. Flush with minimal amount of water possible before and after the feeding.

Diverticulitis

<u>Diverticulosis</u> – multiple outpouching of the lining of the bowel that extends through a defect in the muscle layer and are <u>without</u> inflammation or symptoms.

<u>Diverticulitis</u> – when food and bacteria are retained in the outpouchings and cause inflammation or infection and impede drainage and lead to perforation or abscess formation.

<u>Skip Lesions</u> – if present then it is Crohn's Disease and not Diverticulitis.

<u>Asterixis</u> – abnormal muscle tremor consisting of involuntary muscle movements in the hands and sometimes the feet and tongue. Usually found in patients with liver disease.

<u>Portal HTN</u> – increased pressure in the portal vein caused by blockage of blood flow through the liver. Portal HTN is found in diseases such as cirrhosis, which is causes ascities, splenomegaly, and verices.

Hepatic Encephalopathy – liver cannot process protein and causes ammonia levels to rise.

Suction Chamber

PLEUR-EVAC has 3 chambers

	Suction Chamber	Water Seal Chamber	<u>Drainage Chamber</u>	
←	H ₂ 0 Should bubble constantly. If it is not bubbling then the lung	10 – 20 cm H20 that fluctuates with respirations. If it is not	Mark at beginning of shift. Should be filling up (more at end of shift	↑T
↓TO WALL↓	has re-expanded (good).	fluctuating or tidaling then the lung has re- expanded (good). Not expected: constant bubbling (air leak).	than at beginning). 100mL/hr. Serosangenous drainage. Do not empty, when it is full you replace the whole unit.	↑TO PATIENT↑

Need to have a vaso-occlusive dressing at the bedside. It is usually a vaseline gauze dressing. If tube is dislodged from patient, cover it with vaseline gauze and call Dr. If tube is dislodged from wall. Put it in sterile H_20 to clean it before reconnecting it.

If water is not fluctuating and bubbling then the lung has re-expanded.

Keep patient in semi-fowlers position to permit air and H₂0 in the pleural space.

EENT Drugs

- 1. Eye Disorders
 - a. Cataract
 - i. Mydriatics (dilators)
 - 1. Atropine sulfate
 - ii. Colace
 - b. Glaucoma
 - i. Miotics (Constricts Pupil)
 - 1. Pilocarpine (outflow of aqueous humor)
 - ii. Carbonic Anhydrase Inhibitor
 - 1. Diamox (↓ Production of AH)
 - iii. Beta Blocker
 - 1. Timola (↓ IOP ↓ Production of AH)
 - iv. Xalatan (latanoprost ↓ IOP) take once a day ↑ outflow of AH.

Avoid: Anticholinergics, Nasal Decongestants, Anti-histamines.

- 2. Ear Disorders:
 - a. Meniere's Disease
 - i. Antivert (meclizine)

Avoid: Ototoxic drugs like aminoglycosides "Nycin", Lasix, Aspirin.

- 3. Nose Disorders
 - a. Allergic Rhinitis
 - i. Loratidine
 - ii. Allegra
 - iii. Steroids
 - b. Epistaxis Epistaxis

Derma

- 4. Burns
 - a. Silver Nitrate
 - b. Marfedine (sulfamylon)
- 5. <u>Decubitus Ulcers</u>
 - a. Dressing
 - i. Hydrocolloid
 - ii. Hydrophyllic (duodenal)
- 6. Cancer
 - a. Chemotherapy
 - i. Antiemetic
 - 1. Zofran (odansetron)
 - ii. Multiple Myeloma
 - 1. Allopurinol

EYES

Cataract – Opacity of lens.

Assessment:

Blurred vision

Decreased Color

Persistent vision is better in dim light.

Tx:

Mydriatics / Dilate Eye

Cataract Surgery on one eye at a time.

Glaucoma – it is a medical emergency. Cannot be repaired can only be slowed.

Tonometer 10-20 normal.

↑ IOP because of decreased drainage of aqueous humor.

Increased production of aqueous humor.

Assessment:

Tunnel vision

Loss of peripheral vision (Can see center objects, cannot see outside of periphery).

Halo's in bright light

Vision is worse in the afternoon.

Tx:

Miotics - Constrict

Retinal Detachment – Layer of retina separates

Assessment:

See floaters, flashes of light, curtains being drawn. Loss of portion of visual field.

Tx:

Patch both eyes, Bed rest, Decrease IOP, Do not sneeze cough or strain to upset the eye. Penetrating objects of the eye – Cover eye and go to E.R.

Chemical burn of eye – flush with water for 15-20 min.

Cardiac Medications

- 1. Stress Test Physical / Chemical
 - a. Persantine
 - b. Adenosine
 - c. Dobutamine
- 2. Cardiac Arrythmias / Dysrithmias
 - a. If symptomatic give the following and check K⁺.
 - i. Atropine
 - ii. Digoxin
 - iii. Anticoagulants (FATCHILDAP)
 - iv. Beta-Adrenergic Agonist

Atropine, Digoxin, Anticoagulants, and Beta-Adrenergic Agonist are contraindicated in BPH and Glaucoma

- b. Amiodarone (Cordarone) v tach, PVC's, V-fib.
- 3. CAD (Coronary Artery Disease)
 - a. Anti-lipidemics "Statin" ↓ LDL, give at night.
 - i. Rosovastatin
 - ii. Atrovastatin
 - iii. Lovastatin
 - iv. Pravastatin
 - v. Fluvastatin
 - vi. Simvastatin
 - b. Vasodilators Nitrates ↓ BP
 - i. Nitroglycerin Patch
 - ii. Nitroglycerin Paste
 - iii. Isosorbide Mononitrate
 - iv. Isosorbide Dinitrate
 - c. Anti-hypertensives (See Neuro Drugs)
 - d. Calcium channel blocker "dipine"
 - i. Amlodipine
 - ii. Dilitazem (cardizem)
 - iii. Felodipine
 - iv. Nifedipine
 - v. Nicardipine
 - e. Anti-coagulants (FATCHILDAP)
 - i. Contraindicated in Peptic Ulcer Disease (PUD) or hx of bleeding.

- 4. Angina
 - a. Nitroglycerine vasodilate
 - b. Beta-blocker "olol"
 - c. Anti-coagulants
- 5. MI
 - a. Tx:
- 1. Morphine
- 2. Oxygen
- 3. Nitrates
- 4. Aspirin
- 5. Thrombolytics
- 6. Heparin
- 7. Beta-blockers
- b. Anti-anxiety
- 6. Heart Failure
 - a. Diuretics
 - b. Digoxin
 - c. Morphine Sulfate
 - d. Inotropics ↑ BP ↑ Contraction
 - i. Dobutamine
 - ii. Dopamine
- 7. Cardiogenic Shock Cardiac Tamponade
 - a. MSO₄
 - b. Digoxin
 - c. Inotropics (Dobutamine, Dopamine)
 - d. Diuretics
 - e. Vasodilators
- 8. Pericarditis
 - a. Antibiotics
 - b. Anti-inflammatory Steroids
- 9. Endocarditis
 - a. Antibiotics (PCN) Penicillin
- 10. Valvular Disease
 - a. Beta-blockers
 - b. Digoxin
- 11. Cardiomyopathy hospice
 - a. Digoxin
 - b. Lasix
 - c. Diuretic

- 12. Raynauld's Disease, PAD
 - a. Anti-platelet
 - i. Trental (Pentoxifylline)
 - ii. Pletal (Cilostazol)
- 13. Buerger's Disease / Thromboangitis Obliterans
 - a. Peripheral Vasodilators
 - i. Trental
 - ii. Pletal
- 14. AAA
 - a. Anti-hypertensives
 - b. Anti-coagulants
- 15. Hypertensive Crisis ↓ BP ↑ Urinary Output, change positions slowly
 - a. Nipride wrap in dark foil
 - b. Nitroglycerin IV

Anti-hypertensives – Cardiac Continued – Will cause ↓ BP, dizziness, lightheadedness, syncope.

- 1. Alpha Adrenergic "Zosin"
 - a. Doxazosin
 - b. Prazosin
 - c. Terazosin
- 2. ACE Inhibitors "Pril" (angiotensin Converting enzyme inhibitors). Low K⁺, check creatinine, persistent cough.
 - a. Catopril (Capoten)
 - b. Benzepril (Lotensin)
 - c. Enalapril (Vasotec)
 - d. Fosinopril (Monopril)
 - e. Lisinopril (Prinvil / Zesteril)
 - f. Quinapril (Accupril)
 - g. Ramipril (Altace)
- 3. ARB (Angiotensin Receptor Blocker) "sartan"
 - a. Volsartan
 - b. Olmesartan
 - c. Candisartan
 - d. Losartan
- 4. Beta Blocker "olol" ↓ Heart Rate
 - a. Metoprolol
 - b. Acebutolol
 - c. Labetalol
 - d. Atenolol
 - e. Nadolol (Corgard)
 - f. Timolol
 - g. Sotalol
 - h. Carvedilol (Coreg)
 - i. Propranolol
- 5. Calcium Channel Blockers "Dipines"
 - a. Amlodipine (Norvasc)
 - b. Diltiazem (Cardizem)
 - c. Felodipine (Plendil)
 - d. Nifedipene (Procardia)
 - e. Nicardipine (Cardene)
 - f. Verapamil (SE: Constipation)
- 6. Diuretics
 - a. Loop ↑ urinary output (eat bannana's oranges, cantaloupe)
 - i. Bumetanide (Bumex)

- ii. Furosemide (Lasix)
- iii. Torsenanimide (Demadex)
- b. Osmotic (tx: cerebral edema; check BP and K⁺)
 - i. Mannitol (Osmitrol)
- c. Carbonic Anydrase Inhibitor
 - i. Acetazolemide (Diamox); Tx: IOP, Glaucoma
- d. Potassium Sparing
 - i. Spironolactone (Aldactone)
 - ii. Amiloride
 - iii. Triamterene
- e. Thiazides Assess for sulfa allergy
 - i. Chlorothiazide (Diuril)
 - ii. Hydrochlorothiazide (Hydrodiuril)
- f. Zaroxolyn (Metolazone) causes ↓ SOB
- 7. Sympatholytics
 - a. Clonidine (Catapress)
 - b. Methyldopa (Aldomet)
 - c. Hydrolizene
- 8. Peripheral Vasodilators & Anti-platelet
 - a. Trental (Pentoxyfilline)
 - b. Pletal (Cilostazol) ↑ microcirculation and tissue perfusion; antiplatelet.

Source of Vitamins – Vitamin Enriched Foods

- 1. Vitamin B1 = Thiamin = Energy
 - a. Thiamin is given to:
 - i. Diabetics
 - ii. Alcoholics
 - b. Foods Rich in Thiamin
 - i. Tomatoes
 - ii. Tuna
 - iii. Eggplant
 - iv. Asparagus
 - v. Mushrooms
 - vi. Sunflower
 - vii. Spinach
 - viii. Romaine Lettuce
 - ix. Green Peas
 - x. Brussel Sprouts
 - xi. Pork
 - xii. Nuts
 - xiii. Whole Grain
 - xiv. Legumes
- 2. Vitamin B6 (Pyridoxine) given to patients with TB specifically taking Inh because of peripheral neuropathy or neuritis.
 - a. Meat
 - b. Poultry
 - c. Fish
 - d. Corn
 - e. Yeast
- 3. Vitamin B8 (Biotin). Lower digestive tract utilization of proteins folic acid and B12.
 - a. Whole Brown Rice
 - b. Wheat Germ
 - c. Legumes
 - d. Egg Yolk
 - e. Sprouted Seeds
 - f. Cauliflower
 - g. Fruits
 - h. Nuts
- 4. Vitamin B9 = Folic Acid; given to
 - a. Prenatal Moms to prevent neural tube defects
 - b. Sickle Cell Anemia patients
 - c. Hemophiliacs

- 5. Vitamin B12 (Cobalamin) Given to patients that undergo gastrectomy. IM for life.
 - a. Liver
 - b. Organ Meats
 - c. Poultry
 - d. Dried Beans
 - e. Egg Yolk
 - f. Brewers Yeast
 - g. Milk
 - h. Nuts
 - i. Green Leafy Vegetables
 - j. Citrus Fruits
- 6. Billroth I / Gastroduodenostomy Anastomosis of the upper portion of the stomach to the duodenum.
- 7. Billroth II / Gastroduodenostomy A connection usually constructed surgically between the stomach and the jejunum.

Diabetic Medications

- 1. Alpha glucoside inhibitors delays absorption of carbohydrates & digestion.
 - a. Glycel (Milgital) take with milk
 - b. Acarboose Milgital take with meals or first bite.
- 2. Biguanides ↓ Promote insulin
 - a. Glucophage (Metformin) take with meals BID. Hold 48 hours prior to angiogram and surgery (Risk for metabolic acidosis)
 - i. Check Creatinine
 - ii. AE: VAND
- 3. Sulfonylurent take once a day; no alcohol (Disulfiram like reaction if ETOH)
 - a. Glyburide
 - b. Amaryl
 - c. Glipizide
- 4. Thiazoline diones ↓ insulin resistance in muscle
 - a. Actose hepatoxic
 - b. Avandia (Golitazam)
- 5. Meglitinides
 - a. Prandin 1-30 mins before meals
 - b. Starlix with meals (rapid onset of medication). Can cause patient to be hypoglycemic 15gm of carbs.

Calcium & Magnesium

- 1. Hypocalcemia and Hypomagnesemia both have 3T's
 - a. Tetany
 - b. Trousseau's Sign (BP cuff)
 - c. Chvostek's Sign (twitches)
- 2. Hypercalcemia Symptoms (normal 8.5 10)
 - a. Bone pain
 - b. Back/ Joint/ Flank
 - c. Constipation
 - d. Renal Stones
 - e. Fractures
- 3. Hypomagnesemia
 - a. Tall T-waves
 - b. Tachycardia
 - c. Hypertension
 - d. Decreased bowel sounds
 - e. Anorexia
 - f. Shallow respirations
 - g. twitching
- 4. Hypermagnesemia (normal 1.6 2.6)
 - a. Neurological depression
 - b. Drowsiness Lethargy
 - c. Loss of Deep Tendon Reflex
 - d. Respitory Insufficiency
 - e. Bradycardia
 - f. Hypotension
- 5. Magnesium Toxicity (Greater than 2.6)
 - a. Blood pressure < 90/60
 - b. Urine Output < 30 mL/hr
 - c. Respiratory Rate < 12 min
 - d. Reflex (O +/-) Deep Tendon Reflex
 - e. Pulmonary Edema (Crackles with fever)

Drugs and their Antidotes

- 1. Acetaminophen Acetylcycteine
- 2. Benzodiazepine Flumazenil
- 3. Coumadin Vitamin K
- 4. Curare Tensilon
- 5. Cyanide poisoning Methylene Blue
- 6. Digitalis Digibind
- 7. Ethylene poisoning Antizol
- 8. Heparin Protamine Sulfate
- 9. Iron Desferal
- 10. Lead Edetate Disodium (EDTA), Dimercaprol (BAL), Succimer (CHEMET)
- 11. Lovenox Protamin Sulfate
- 12. Magnesium sulfate Calcium Gluconate
- 13. Morphine sulfate Naloxone Hydrochloride
- 14. Methotrexate Leucovorine
- 15. Mestinon Atropine Sulfate
- 16. Neostigmine Pralidoxime Chloride (PAM)
- 17. Penicillin Epinephrine

Drugs which are best TAKEN ON AN EMPTY STOMACH

- 1. Ampicin (Ampicillin)
- 2. Chloromycetin
- 3. Erythrocin
- 4. Ferrous Sulfate
- 5. Inh
- 6. Isordil
- 7. Penicillin
- 8. Rifadin

Drugs which are best TAKEN BEFORE MEALS

- 1. Atropine Sulfate
- 2. Bactrim
- 3. Dalmane
- 4. Insulin
- 5. Mestinon
- 6. Valium

Drugs which are best TAKEN AFTER MEALS

- 1. Artane (trihexyphenidyl HCl)
- 2. Cogentin
- 3. Clozaril
- 4. Deltasone
- 5. Elavil
- 6. Haldol
- 7. Lithium
- 8. MAOI
- 9. Nardil
- 10. Pyridium
- 11. Ritalin
- 12. Streptomycin
- 13. Thorazine
- 14. Tofranil

Normal Lab Values

Lab Test	Value	Low Meaning	High Meaning
Acid Phosphatase	1160 U/L		
Alkaline Phosphatase	30 – 85 ImU/mL		
Ammonia Level	15 -110 ug./dL		
Amylase	56 – 190		
Anti-streptolysin O	≤ 160 Todd Units /mL		
(ASO) Titer			
Arterial oxygen	80-100 mm Hg		
pressure (PaO ₂)			
Bicarbonate (Plasma)	22 -26 mEq/L		
Bilirubin direct	0-0.3 mg/dL		
Bilirubin Indirect	0.1 - 1 mg/dL		
Bilirubin Total	< 1.5 mg/dL		
Bleeding time	1-9 minutes		
Blood Urea Nitrogen	10-20 mg/dL		
(BUN)			
Calcium (Ca)	9 – 10.5 mg /dL		
Chloride (Cl)	90 – 110 mEq /L		
Cholesterol Level	< 200 mg /L		
Cortisol level	8am 6 -28 ug/dL		
Creatinine	0.5 - 1.5 mg/dL	Muscle Damage	Renal Disease
Creatinine	Male: 12–70 U/mL		
phosphokinase (CPK)	Female: 10–55 U/mL		
Erythrocyte	Male: < 15 mm/hr	Decreased RBC's,	
Sedimentation Rate	Female: < 20 mm/hr	Sickle Cell	
(ESR)			
Folate	5-20 ug/mL	Liver Disease	Pernicious Anemia
Glucose level (GTT)	70 – 115		
Hematocrit (Hct)	Male: < 47%	Anemia	Poycythemia
	Female: < 42%		
Hepatitis B surface	Negative		
antigen (HBsAg)			
High Density	> 40 mg/dL		
Lippoprotein			
Human Growth	Male: < 5 ug/L		
Hormone (HGH)	Female: < 10 ug/L		
Immunoglobulin E (Ig	< .55 mg/dL		
E)			
Immunoglobulin M	55-375 mg /dL		
(Ig M)			
Ketosteroids	Male: 7-25 mg /24hr		
	Female: 4-15 mg/24hr		
LDH	45 -90 U/L		

Lead	< 20 ug/dL		
Low Density	< 100 mg/dL		
Lipoprotein (LDL)			
Myoglobin	0-85 ng/mL		
Magnesium	1.6 – 2.6	Hypotension	Hypertension, loss of
			deep tendon reflex
Oxygen saturation of	95-98%		
arterial blood (SaO ₂)			
Partial	60-70 seconds		
Thromboplastin Time			
(Coumadin)			
PCO_2	35-45 mm Hg		
Percent Hydrogen	7.35-7.45		
(ph, blood)			
Phenylalanine level	< 2 mg/dL		
Phosphorus	3-4.5 mg/dL		
Platelet Count	150,000 - 450,000		
Potassium (K ⁺)	3.5-5.0 mEq/L		
Protein (Urine)	6.8-8.3 g/dL		
Prothrombin Time	Male: 4.7 – 6.1 M/cu		
(PT)	Female: 4.2 – 5.4		
	M/cu		
Sodium (Blood)	135 – 145 mEq/L		
SGOT/AST	10–50 IU/L or 8-20		
	U/L		
SGPT/ALT	5-35 IU/L or 8-20 U/L		
T3 (Triiodo	75-220 ng/dL		
Thyronine)			
T4 (Thyroxine)	4-11 ug/dL		
Troponin	< 0.6 ng/mL		
Urine Osmolality	50 -1400 mOsm/kg		
Urine Specific	1.005 - 1.025	Edema, overhydration	Dehydration
Gravity			
Uric Acid Level	250 – 750 ml/24hr		
White Blood Cells	5,000 – 10,000	Immunosuppressed	Infection
(WBC)			

Adrenal Disorders

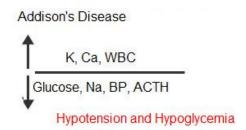
Addison's Disease and Cushing's Syndrome / Disease

Addison's Disease

Addison's disease is failure of the adrenal glands to produce sufficient amount of steroids. The body does not make enough glucocorticoids and mineralcorticoids. This is caused by tuberculosis, cytomegalovirus, and histoplasmosis. Addisonian Crisis is caused by (S.I.T.S.) Stress, Infection, Trauma, and Surgery. Assessment: headache, severe abdominal, leg and lower back pain, generalized weakness, irritability and confusion, severe hypotension, shock.

TX: Corticosteroids like Prenisone

DX: Cosyntropin Stimulation Test is used to confirm Addison's Disease.

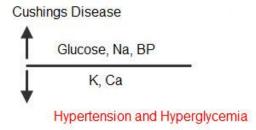


Cushing's Syndrome / Disease

Cushings Syndrome is a result of excessive glucocorticoid exposure. Usually as a result of pharmacological treatment of RAD or arthritis. Cushing's Disease is caused by pituitary or adrenal adenomas or excessive production of ACTH (adrenal corticotropic hormone).

SX: Moon Face, weight gain, DM symptoms polydipsia, polyphagia, and polyuria because glucocorticoids oppose the action of insulin.

TX: Reduce the amount of steroid or administer every other day. Perform surgery to remove the responsible adenoma. Diet \(\gamma\) protein and potassium \(\psi\) calories, carbohydrates, and sodium.



Pituitary Disorders – Diabetes Insipidus and Syndrome of Inappropriate Anti-diuretic Hormone

DI – Diabetes Insipidus

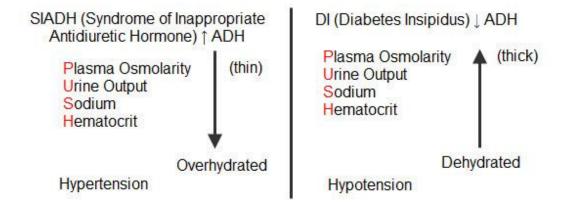
DI is caused by failure of the posterior pituitary to secrete ADH. It is treated with synthetic vasopressin. It is usually caused by hypothalamic injury (brain trauma or neurosurgery) or by drugs (lithium or demeclocyclene). This results in polyuria that is caused by either inadequate amount of ADH (hypothalamic DI) or failure of the kidneys to respond to ADH (nephritic DI). Urine is dilute and between 5-10 liters per day. Urine specific gravity is below 1.005.

P.U.S.H up ↑ (Plasma Osmolarity, Urine Output, Serum Sodium, Hematocrit) = Dehydration.

SIADH - Syndrome of Inappropriate Anti-diuretic Hormone

Syndrome of <u>increased</u> ADH activity despite of reduced plasma osmolarity. Usually indicated by hyponatremia and it is associated with disorders of the central nervous system, various tumors, anxiety, pain, pneumonia, and drugs.

P.U.S.H. down ↓ (Plasma Osmolarity, Urine Output, Serum Sodium, Hematocrit) = Overhydration.



Arterial Blood Gases

		NORMAL RANGE			
ABG Chart	Uncompensated	Compensated		Uncompensated	
		Acidosis (acid)	Normal pH	Alkalosis (base)	
рН	Acidosis	7.35	7.40	7.45	Alkalosis
PC02 (Respiratory)	Acidosis	45	40	35	Alkalosis
HC03 (Metabolic)	Acidosis	21-24	-	25-28	Alkalosis

The pH determines the first name of either (compensated or uncompensated) and the last name of either (acidosis, or alkalosis).

The PC02 and HCO3 determine the middle name of either (respiratory or metabolic). If the PC02 name matches the pH last name then it is <u>Respiratory</u>. If the HC03 name matches the pH last name then it is <u>Metabolic</u>.

If the pH is normal range then it is Complete Compensation.

If pH is <u>not</u> normal and either the pC02 or HC03 <u>are</u> normal range then there is <u>NO</u> <u>Compensation</u>.

Practice:

pH of **7.18**, PC02 of **68**, and HC03 of **25** = Uncompensated Respiratory Acidosis.

pH of **7.51**, PC02 of **40**, and HC03 of **30** = Uncompensated Metabolic Alkalosis

pH of **7.18**, PC02 of **85**, and HC03 of **24** = Uncompensated Respiratory Acidosis

pH of **7.36**, PC02 of **49**, and HC03 of **28** = Compensated Respiratory Acidosis

pH of **7.19**, PC02 of **82**, and HC03 of **10** = Respiratory and Metabolic Acidosis (Mixed Acidosis because both PC02 and HC03 names match the pH last name).

Common Causes:

Respiratory Acidosis

Due to respiratory depression (drugs, CNS trauma), pulmonary disease (pneumonia COPD), respiratory hyperventilation.

Respiratory Alkalosis

Due to hyperventilation (emotions, pain).

Metabolic Acidosis

Due to diabetes, shock, renal failure, intestinal fistula, Diarrhea (**ASS**idosis).

Metabolic Alkalosis

Due to sodium bicarbonate overdose (TUMS, antacids), prolonged vomiting, nasogastric drainage.

When pt is intubated PaCO2 should be 50 or greater and PaO2 should be less than 50.

Fetal Monitoring

1. Description

- a. The fetal monitor displays the fetal heart rate (FHR).
- b. The device monitors uterine activity.
- c. The monitor assesses frequency, duration, and intensity of contractions.
- d. The monitor assesses FHR in relation to maternal contractions.
- e. Baseline FHR is measured between contractions; the normal FHR at term is 120 to 160 beats per minute.

2. External Fetal Monitoring

- a. External fetal monitoring is noninvasive and is performed using a tocotransducer or Doppler ultrasonic transducer.
- b. Perform Leopold's maneuvers to determine on which side the fetal back is located, and place the ultrasound transducer over this area (fasten with a belt).
- c. Place the toctransducer over the fundus of the uterus where contractions feel the strongest (fasten with a belt).
- d. Allow the client to assume a comfortable position, avoiding vena cava compression.

3. Internal fetal monitoring

- a. Internal fetal monitoring is invasive and requires rupturing of the membranes and attaching and electrode to the presenting part of the fetus.
- b. Mother must be dilated 2 to 3 cm to perform internal monitoring.

4. Periodic patterns in the FHR

- a. Fetal bradycardia and tachycardia
 - i. Bradycardia: The FHR is less than 120 beats per minutes for 10 minutes or more.
 - ii. Tachycardia: The FHR is greater than 160 beats per minute for 10 minutes or more.
 - iii. Change position of the mother and administer oxygen.
 - iv. Notify the physician.

b. Variability

- i. Absent variability: undetected variability.
- ii. Minimal variability: greater than undetected but not more than 5 beats per minute.
- iii. Moderate variability: fetal heart rate fluctuations from 6 to 25 beats per minute.
- iv. Marked variability: fetal heart rate fluctuations greater than 25 beats per minute.
- v. Fluctuations in the baseline FHR may include irregular fluctuations of 2 cycles per minute or greater.
- vi. Decreased variability can result from fetal hypoxemia, acidosis, or certain medications.
- vii. A temporary decrease in variability can occur when the fetus is in a sleep state (sleep states do not usually last longer than 30 minutes).

c. Accelerations

i. Accelerations are brief, temporary increases in the FHR of at least 15 beats greater than the baseline and lasting at least 15 seconds.

- ii. Accelerations usually are a reassuring sign, reflecting a responsive, nonacidotic fetus.
- iii. Acceleration usually occur with fetal movement.
- iv. Accelerations may be nonperiodic (having no relation to contractions) or periodic.
- v. Accelerations may occur with uterine contractions, vaginal examinations, or mild cord compression, or when the fetus is in a breech presentation.

d. Early decelerations

- i. Early decelerations are decreases in FHR below baseline; the rate at thelowest point of the deceleration usually remains greater than 100 beats per minute.
- ii. Early decelerations occur during contractions as the fetal head is pressed against the woman's pelvis or soft tissues, such as the cervix, and return to the baseline FHR by the end of the contraction.
- iii. Tracing shows a uniform shape and mirror image of uterine contractions.
- iv. Early decelerations are not associated with fetal compromise and require no intervention.

e. Late decelerations

- i. Late decelerations are nonreasuring patterns that reflect impaired placental exchange or uteroplacental insufficiency.
- ii. The patterns look similar to early deceleration but begin well after the contraction begins and return to baseline after the contraction ends.
- iii. The degree of fall in the heart rate from baseline is not related to the amount of uteroplacental insufficiency.
- iv. Interventions include improving placental blood flow and fetal oxygenation.

f. Variable decelerations

- i. Variable decelerations are caused by conditions that restrict flow through the umbilical cord.
- ii. Variable decelerations do not have the uniform appearance of early and late decelerations.
- iii. Their shape, duration, and degree of fall below baseline heart rate are variable; they fall and rise abruptly with the onset and relief of cord compression.
- iv. Variable decelerations also may be nonperiodic, occurring at time unrelated to contractions.
- v. One considers baseline rate and variability when evaluating variable decelerations.
- vi. Variable decelerations are significant when the FHR repeatedly decreases to less than 70 beats per minute and persist at that level for at least 60 seconds before returning to the baseline.

g. Hypertonic uterine activity

- i. Assessment of uterine activity includes frequency, duration, intensity of the contractions, and uterine resting tone.
- ii. The uterus should relax between contractions for 60 seconds or longer.

- iii. Uterine contraction intensity is about 50 to 75 mm Hg (with the intrauterine uterine catheter) during labor and may reach 110 mm Hg with pushing during the second stage.
- iv. The average resting tone is 5 to 15 mm Hg.
- v. In hypertonic uterine activity the uterine resting tone between contractions is high, reducing uterine blood flow and decreasing fetal oxygen supply.
- h. Interventions for nonreassuring patterns
 - i. Identify the cause (assess for cord prolapsed).
 - ii. Discontinue oxytocin (pitocin) if infusing as prescribed.
 - iii. Change the mothers position (avoid the supine position for patterns associated with cord compression).
 - iv. Administer oxygen by face mask a 8 to 10L per minute.
 - v. Increase intravenous (IV) fluids as prescribed.
 - vi. Notify the physician or nurse midwife as soon as possible.
 - vii. Prepare to initiate continuous electronic fetal monitoring with internal devices if not contraindicated.
 - viii. Prepare to obtain a fetal scalp pH monitor to determine a blood pH value.
 - ix. Prepare for cesarean delivery if necessary.
- i. Nonreassuring Patterns
 - i. Tachycardia
 - ii. Bradycardia
 - iii. Decreased or absent variability
 - iv. Late decelerations
 - v. Variable decelerations falling to less than 70 beats per minutes for longer than 60 seconds.
 - vi. Prolonged decelerations
 - vii. Hypertonic uterine activity

Stages of Labor

- 1. Stage 1 Stage 1 is cervical dilation from 0 10 cm in three phases: latent, active, and transition.
 - a. Latent Phase
 - i. Cervical dilation is 1 to 4 cm.
 - ii. Uterine contractions occur every 15 to 30 minutes and are 15 to 30 seconds in duration and of mild intensity.
 - iii. Offer fluids and ice chips
 - iv. Encourage voiding every 1 to 2 hours.
 - b. Active Phase
 - i. Cervical dilation is 4 to 7 cm.
 - ii. Uterine contractions occur every 3 to 5 minutes and are 30 to 60 seconds in duration and of moderate intensity.
 - iii. Encourage maintenance of effective breathing patterns.
 - iv. Promote comfort with backrubs, sacral pressure, pillow support, and position changes.
 - v. Offer fluids and ice chips
 - vi. Encourage voiding every 1 to 2 hours.
 - c. Transition Phase
 - i. Cervical Dilation is 8 to 10 cm.
 - ii. Uterine contractions occur every 2 to 3 minutes and are 45 to 90 seconds in duration and strong intensity.
 - iii. Offer fluids and ice chips
 - iv. Encourage voiding every 1 to 2 hours.
- 2. Stage 2 Stage 2 is from complete dilation (10cm) to birth of the baby.
 - a. Cervial dilation is complete
 - b. Monitor fetal and mother vital signs
 - c. Assist with positioning
 - d. Prepare for birth of the baby.
- 3. Stage 3 Stage 3 is delivery of the placenta to 1 hour after delivery of the baby.
 - a. Placenta is delivered between 5 and 30 minutes after the birth of the baby.
 - b. Shultze mechanism: Center portion of placenta separates first, and its shiny fetal surface emerges from the vagina.
 - c. Duncan mechanism: Margin of placenta separates, and the dull, red, rough maternal surface emerges from the vagina first.
 - d. Assess uterine status and maternal vital signs.
 - e. Following birth of the placenta, uterine fundus remains firm and is located 2 finger breadths below the umbilicus.
 - f. Examine placenta for cotyledons and membranes to verify that it is intact.
 - g. Assess mother for shivering and provide warmth.
 - h. Promote parental-neonatal attachment.
- 4. Stage 4 -Period of time from 1 4 hours after delivery of the baby.
 - a. Blood pressure returns to prelabor level.
 - b. Fundus remains contracted, in the midline, 1 to 2 fingerbreadths below the umbilicus.
 - c. Lochia is moderate scant and red.

- d. Perform maternal assessments every 15 minutes for 1 hour, every 30 minutes for 1 hour, and hourly for 2 hours.
- e. Provide warm blankets
- f. Apply ice packs to perineum.
- g. Massage the uterus if needed and teach the mother to massage the uterus.
- h. Provide breast-feeding support as needed.

AUTONOMIC NERVOUS SYSTEM

Consists of the Sympathetic and Parasympathetic Nerves. Both impulses control internal organs and both are regulated by impulses from the hypothalamus and other parts of the brain. Cardiac muscle, smooth muscle, and glandular epithelial tissue receive impulses only via the autonomic nervous system.

Sympathetic (synonyms) Parasympathetic (synonyms)

Adrenergic Cholinergic

Sympathomimetic Sympatholytic

Anticholinergic Antiadrenergic

Vagalytic Vagametic

	Sympathetic	Parasympathetic
Stimulates	Stimulates most systems;	Inhibits most systems;
	Inhibits GI and Urinary	Stimulates GI and Urinary
Main Function	Fight or Flight response;	Repair response; promote
	mobilizes reserves; prepares	vegative function; SLUD:
	body to meet emergencies.	Salivate, Lacrimate, Urinate,
		Deficate.
Secretion	Adrenalin	Acetylcholine
Eyes	Pupil Dilation: Mydriatic	Pupil constriction, Miotic;
		Decreases intraocular
		pressure.
Saliva	Stops secretion	Stimulates secretion
Heart	Heart rate increases: Increases	Heart rate decreases: Decrease
	SA node rate; Increases	SA node rate; Decrease
	contractibility Vasodilation of	contractibility.
	coronary vessels. BP	Vasoconstriction of coronary
	increases.	vessels. BP decreases.
Lung	Bronchial tube dilation	Bronchial tube constriction
Stomach	Decrease muscle activity;	Increase muscle activity;
	slows glandular secretion;	Increases secretion: Speeds
	delays gastric emptying.	gastric emptying.
Intestine	Decreases paristalsis	Increases paristalsis
Pancreas	Decreases enzyme secretion	Increases enzyme secretion
Gallbladder		Biliary ducts stimulated
Blood sugar	Increases blood sugar	Decreases blood sugar
Liver	Hepatic glycogenolysis	
Kidney	Vasoconstriction; decrease	Vasodilation; Increase urine
	urine output, urine retention	output, urine excretion
Skin	Vasoconstriction	Vasodilation

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Dry Erase Board Contents

Addisons Graphic

Cushings Graphic

Diabetes Insipidus Graphic

SIADH Graphic

Arterial Blood Gas Graphic

Suction Chamber Graphic

Standard Precautions

Conversions

1kg = 1000g	1000mL = 1qt	1g = 15gr
1g = 1000mg	1tsp = 5 mL	0.3g = 5gr
1mg = 1000 mcg	1tbs = 15 mL	60mg = 1gr
1mcg = 1000ng	60m = 1dr = 4mL	30mg = 1/2gr
1L = 1000 mL	1 floz = 30 mL	1cc = 1cc
30mL = 1oz	1mL = 16m	1cc = 1mL
240mL = 8oz = 1cup	4mL = 1dr	1 kg = 2.2 lbs
500mL = 1pint	1 kg = 2.2 lbs	
100mL = 1dL	4g = 60gr	

 $D/H \times S$ (Desired-Dr. / what you Have x Stock) = Dosage

 $D/M \times S$ (Dr's Order divided by minutes $\times SDF$) = Gtt's per minute.