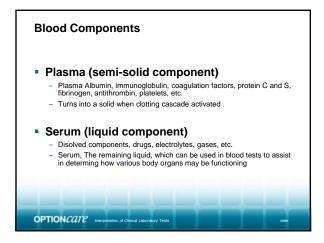




- Fluids and Electrolytes
- Electrolytes Nutritional status
- Body organ function
- Acid-base status
- Immune function
- Compliance with medication regimens

OPTION Care Interpretation of Clinical Laboratory Tests	date



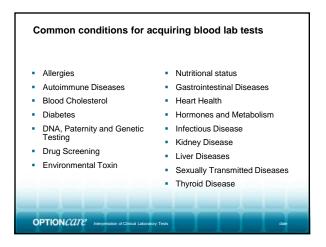


- Suspicion leads the clinician to believe there is a medical problem
 - Infectious diseases (CBC/Differential; Legonella titers, Tularemia, etc.)
 VTE / Pulmonary embolism (D-Dimer)
 - Adrenal Insufficiency (Serum Cortisol pre and post Cosyntropin Injection)
 - Hypo / Hyperthyroidism (Cardiac Arrhythmias, Fatigue, FUO, etc.)
- Systemic Lupus Erythematosus
 Inflammatory Conditions (CRP, ESR)
- And ON....and ON....and ON.
 BASICALLY To ASSIST in confirmation of diagnosis

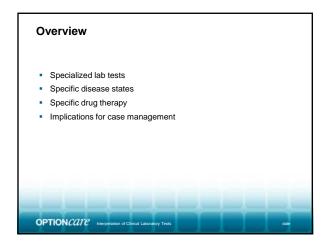
- To follow up on prescribed therapy
 Serum Drug Levels (gentamicin, vancomycin, digoxin, theophylline, thiocyanate)
 - Hemoglobin A1-C (HgA1C)
 Prostate Specific Antigen (PSA)
 - Culture and Sensitivities (C&S)
 - Carcinoembrionic Antigen (CEA)

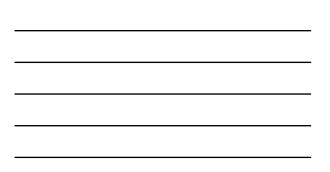
Should NOT draw lab test if nothing is going to be acted upon

OPTIONCATE Interpretation of Clinical Laboratory Tests



2





General Principles

- Serum, blood, urine, CSF other fluids

OPTIONCATC Interpretation of Clinical Laboratory Tests

- Serum, blood, urine, CSF other fluids

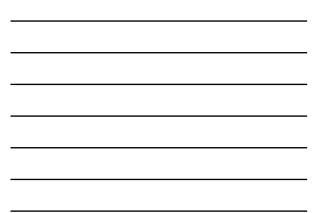
 Screening

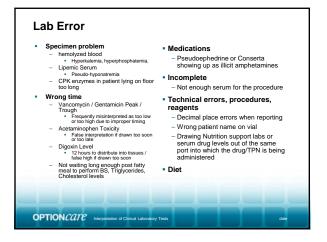
 Qualitative
 Urine drug screen obtunded teenage girl → opiates)

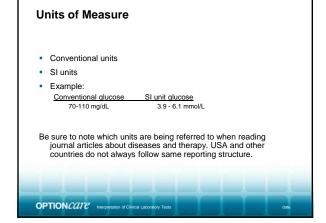
 Diagnostic
 Quanitative
 Serum drug levels
 Serum drug levels
 Example form Fentanyl Level 5 mcg/ml in same teenage girl 2 days post
 tenanyl disk)
- Cost vs benefit

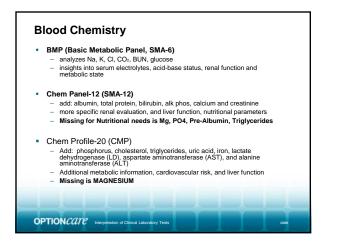
 - Cost vs benefit
 Benefit must outweigh the cost or danger of procedure
 Every blood stick introduces chance for infection
 Daily blood sticks or multiple blood draws throughout therapy may lead to anemia such as seen in the (120 or in the chronic dialysis patient; (multiple blood draws do contribute to some of the anemia in dialysis patients due to their lack of erythropotent in regenerating substrate)
 Outcome must affect decisions in therapeutic management
 BNP greater than 400 in acutely decompensated CHP patient > NATRECOR treatment (expensive drug, but will keep patient out of ICU)

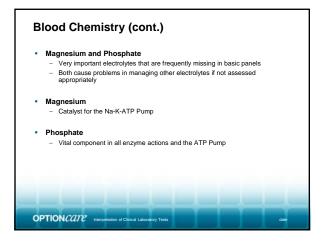
 "Normal Range" 	Variations among labs	
 Defined by healthy population Vary widely within age groups, weight groups, sex, feeding status THUS, normal is only normal in the 	 Use norms listed by lab, keep in mind that there are three blood test "norma ranges." 	
 bell curve of a population REMEMBERthere is NOT 	Personal Norms	
NORMAL serum drug levelonly therapeutic, subtherapeutic and toxic ranges.	 Just like temperature, all have individual normals 	
 Pediatric values are different than adult values 	 High normal may be extreme high in some patients (example: WBC 10,000 may be normal in most, but someone 	
Variations do exist	who normally runs 4,000, this could be signs of serious infection)	
 Age, Sex, wt, ht, food, drug-effect, diseases, etc. Serum creatinine is a fantastic example of how one can MISINTERPRET renal function in the aldery systemic pregnancy and Renal system are fantastic examples of how one can MISINTERPRET serum 	 Be sure to review the individual labs reference points for normal ranges when assessing 	
digoxin levels		

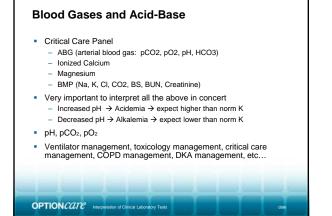


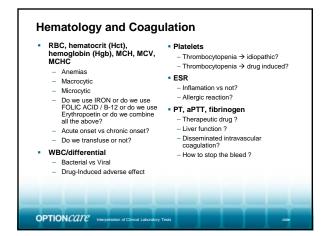














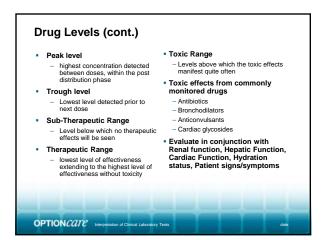


Drug Levels

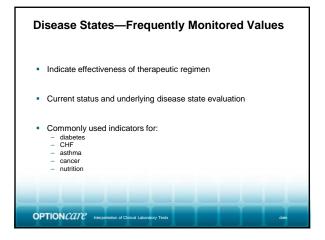
Clinical importance - Maintain safest parameter for best therapeutic outcome

Influenced by many factors

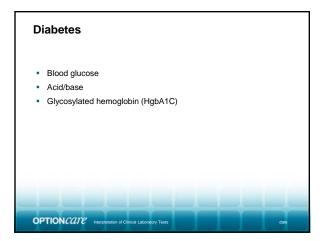
- Compliance, - Interaction,
- Demographics,Clinical condition,
- Timing of administration/collection)
- NO NORMAL levels in human body, thus each person may be affected х. slightly different than another
 - Digoxin is prime example
- 2 % of population will be toxic within therapeutic range OPTIONCATC Interpretation of Clinical Laboratory Tests

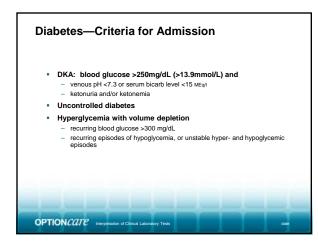


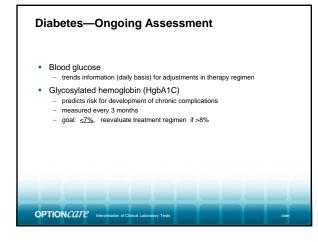














Asthma

Peak flow

- PEF based on "personal best" established over 2-3 weeks of measurement
- PEF < 80% indicates need for additional meds
 PEF <50% indicates a severe asthma exacerbation

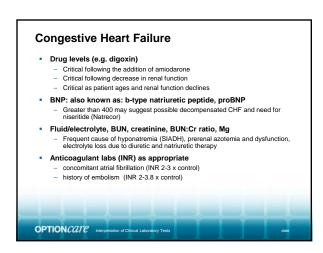
Drugs:

- routine monitoring of serum theophylline is important in long-term control
- zileuton (leukotriene modifier), monitor hepatic enzymes (ALT)

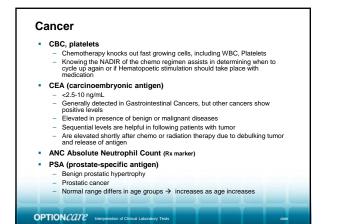
IgE level:

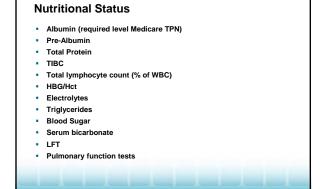
- Allergic asthma
 Rx: Omalizumab

OPTION <i>Care</i>	Interpretation of Clinical Laboratory Tests	date



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OPTIONCATC Interpretation of Clinical Laboratory Tests

