

LABORATORY CRITICAL VALUES

| BIOCHEMISTRY | | | | | IMMUNOLOGY | | | | | HEMATOLOGY | | | | |
|---|---------|-----------------|----------------|----------------|-------------------|-------|---|----------|--------|--|-------|------|-------|---------------------|
| Test na | age | Low | High | unit | Test name | age | Low | High | unit | Test name | age | Low | High | unit |
| Ammonia | <1 y | | ≥100 | μmol/l | CD4 | | Absolute count: <200 | | /μl | Hb | ≤7 w | ≤6.0 | ≥24.0 | g/dl |
| Ammonia | ≥1 y | | ≥200 | μmol/l | C1 inhibitor | | <0.09 | | gr/L | Hb | >7 w | ≤6.0 | ≥20.0 | g/dl |
| Amylase | | | >250 | U/L | Anti ds DNA | | | >300 | IU/ml | Hct | | ≤21 | ≥60 | % |
| Bilirubin(Total) | <1 y | | ≥15 | mg/dl | Pemphigus Ab | | | ≥1/320 | titer | WBC in Blood | | <2.0 | >50 | 10 ³ /μl |
| Calcium | | <6.5 | >13.0 | mg/dl | AMA | | | ≥1/320 | titer | WBC in CSF | | | >100 | /μl |
| Calcium(Ionized) | <1 y | ≤2.0 | ≥6.0 | mg/dl | ASMA | | | ≥1/320 | titer | Neutrophil (Abs) | | <0.5 | | 10 ³ /μl |
| Calcium(Ionized) | ≥1 y | ≤3.0 | ≥6.5 | mg/dl | Brucella (IgG) | | | >15 | Index | Platelet | Adult | <40 | >1000 | 10 ³ /μl |
| Tropoin T | | | >0.1 | μg/L | Wright | | | ≥1/320 | titer | Platelet | Child | <20 | >1000 | 10 ³ /μl |
| Troponin I | | | ≥0.3 | μg/L | ZME | | | ≥1/320 | titer | COAGULATION | | | | |
| Chloride | | <80 | >115 | mEq/L | CH50 | | <80 | | % | Test name | age | Low | High | unit |
| CPK | | | ≥1000 | U/L | IgA | Adult | <20 | | mg/dl | PT | | | >40 | Sec. |
| Glucose | <4 w | ≤40 | ≥400 | mg/dl | IgE | | | >2000 | IU/ml | INR | | | ≥5.0 | Sec. |
| Glucose | ≥4 w | ≤50 | ≥400 | mg/dl | IgG | ≤1 m | ≤200 | | mg/dl | APTT | | | >150 | Sec. |
| Magnesium | | <1.0 | >9.0 | mg/dl | IgG | 2-5m | ≤150 | | mg/dl | Fibrinogen | | ≤60 | | mg/dl |
| Phosphorus | | ≤1.0 | >9.0 | mg/dl | IgG | 6-11m | ≤200 | | mg/dl | Factor II,V,VIII,XI | | ≤5 | | % |
| Potassium | Adult | <2.8 | >6.2 | mEq/L | IgG | 1-15y | ≤250 | | mg/dl | Factor VII | | ≤6 | | % |
| Potassium | <2 m | ≤2.5 | ≥6.0 | mEq/L | IgM | | <15 | | mg/dl | Factor X | | ≤7 | | % |
| Sodium | | ≤120 | ≥160 | mEq/L | B2 glycp(IgG) | | | >50 | U/ml | DRVVT | | | >42 | Sec. |
| Lithium | | | >1.6 | mEq/L | B2 glycp(IgM) | | | >20 | U/ml | APTT-LA | | | >45 | Sec. |
| Urea(except dialysis patient) | | <5 | >100 | mg/dl | NMO-IgG (CSF) | | | Positive | | Protein C | | <25 | | % |
| Creatinine | <4 w | | ≥1.5 | mg/dl | Anti MOG (CSF) | | | Positive | | Protein S | | <20 | | % |
| Creatinine | 4w-2y | | ≥2.0 | mg/dl | VZV-G/M (CSF) | | | Positive | | APCR | | <100 | | % |
| Creatinine | 2y-11y | | ≥2.5 | mg/dl | Wright (CSF) | | | Positive | | MOLECULAR DIAGNOSIS | | | | |
| Creatinine | 12y-15y | | ≥3.0 | mg/dl | VDRL (CSF) | | | Positive | | Test name | | | | Result |
| Creatinine | ≥16y | | ≥10 | mg/dl | ANA (CSF) | | | Positive | | TB (CSF, Respiratory samples) | | | | Positive |
| Iron | | | >500 | μg/dl | Mumps (CSF) | | | Positive | | CSF PCR for any Organism | | | | Positive |
| Osmolality(calculation) | | ≤190 | ≥390 | mosm/L | Measles (CSF) | | | Positive | | Amniotic fl. PCR for any organism | | | | Positive |
| P O2 (Arterial) | Adult | ≤40 | | mmHg | Brucella(CSF) | | | Positive | | Ocular fluid PCR for any organism | | | | Positive |
| P O2 (Arterial) | <2 m | <37 | | mmHg | HAV-IgM | | | Positive | | Mumps PCR | | | | Positive |
| P CO2(arterial) | | ≤20 | ≥60 | mmHg | TOXICOLOGY | | | | | PML-RAR (WB & BMA) | | | | Positive |
| Bicarbonate | | <15 | >40 | mEq/L | Test name | age | Low | High | unit | CMV & BK virus PCR(WB, Urine,..) Transplant patients, Infant < 3 m & patients with immunodeficiency) | | | | Positive |
| pH | | ≤7.200 | ≥7.600 | | Acetaminophen | | | >150 | μg/ml | HSV PCR in genital wound (third trimester), CSF,Amniotic, Eye fluid. | | | | Positive |
| CSF glucose | | <30 | >300 | mg/dl | Carbamazepin | | | >15 | μg/ml | Chlamydia sp.(Eye samples) | | | | Positive |
| CSF protein | | | >45 | mg/dl | Ethosuximide | | | >150 | μg/ml | MTHFR mutation | | | | Homozygous |
| CSF ACE | | | >4.0 | IU/L | Phenobarbital | Child | | >35 | μg/ml | HPV (High risk) | | | | Positive |
| CSF IgG | | In OCB band > 4 | | Band | Phenobarbital | Adult | | >40 | μg/ml | MICROBIOLOGY | | | | |
| CSF Alb | | Alb index >30 | | BBB | Phenytoin | | | >20 | μg/ml | Positive blood ,CSF, other sterile body fluids and biopsy (Liver, kidney, brain, BMB, BMA,...), Abscess, Cornea chip ; Direct & culture | | | | |
| Free T4 | <50 Y | | ≥7.8 | ng/dl | Primidone | | | >15 | μg/ml | Positive Fungal Direct & Culture for CSF & Blood | | | | |
| Free T4 | ≥50 Y | | ≥6.0 | ng/dl | Salicylate | | | >500 | μg/ml | Positive culture for group A streptococci (except throat) | | | | |
| Lactate | | | >60 | mg/dl | Amikacin | | >30, 30 min post infusion >8, 30 min before infusion | | μg/ml | Positive culture or isolate for Cryptococcus Neoformance, Bordetella pertussis, Neisseria gonorrhoeae, Dimorphic fungi (Histoplasma, Coccidioidomycosis, Blastomycosis, Paracoccidioidomycosis) | | | | |
| Uric acid | | | >13.0 | mg/dl | Ethanol | | | >250 | mg/dl | Stool culture positive for, Vibrio,Shigella dys.,E.coli O157H7 (<18 yrs.),Shigella sp.(<12 yrs.),Campylobacter p.(Children), Salmonella typhi, Salmonella sp. (Immunodeficiency di.) | | | | |
| Cortisol | | <5.0 | | μg/dl | Vancomycin | | | >80 | μg/ml | Positive direct smear & culture for Mycobacterium | | | | |
| Prolactin | | | >2100 >99.2 | mIU/L ng/ml | Digoxin | | | >2.4 | ng/ml | Positive culture for streptococcus group A from surgical wound, Legionella, Leptospira,Listeria in pregnant woman and immune- deficient patients,Corynebacterium diph., Streptococcus B from urine, genital,rectom in pregnant woman,Pseudomonas Aeruginosa & Bacillus sp. from eye discharge, | | | | |
| T3 | | | >350 | ng/dl | Gentamycin | | >12, 30 min post infusion >2, 30 min before infusion | | μg/ml | Organisms with multiple antibiotic resistance | | | | |
| T4 | Adult | | >20 | μg/dl | Cyclosporine | ≤6 m | | >700 | ng/ml | Positive culture for Neisseria meningitis from Blood, CSF, ... | | | | |
| T4 | <2 m | <3.5 | >18 | μg/dl | Sirolimus | >6 m | | >25 | ng/ml | Positive culture dialysis fluid | | | | |
| TSH | <4 d | <1.0 | >20 | mIU/L | Theophyline | ≤6 m | | >20 | μg/ml | Gram stain or acid fast positive for Nocardia | | | | |
| TSH | 4d-2y | | >10 | mIU/L | Theophyline | >6 m | | >25 | μg/ml | Malaria parasite : seen organism | | | | |
| 25 OH vit D | | <10 | >150 | ng/ml | Lead (urine) | | | >1000 | μg/L | Detection of strongyloides stercoralis larva | | | | |
| CA 125 | | | >1000 | U/ml | Lead (blood) | ≤15 y | | ≥45 | μg/dl | | | | | |
| Strongly positive test for glucose and ketone in urine | | | | | Lead (Blood) | >15 y | | ≥70 | μg/dl | | | | | |
| Presence of reducing sugars in infants in urine | | | | | Valproic acid | | | >150 | μg/ml | | | | | |
| Presence of pathological crystals (Cysteine , Leucine ,Tyrosine) | | | | | Phenylalanin | <2 m | | >205 | μmol/l | | | | | |
| Entamoeba histolytica troph. In stool | | | | | Phenylalanin | Child | | >100 | μmol/l | | | | | |
| Naegleria & Acanthamoeba in CSF & Eye dis. | | | | | Phenylalanin(DBS) | | | >4.0 | mg/dl | | | | | |
| Toxin A&B Clostridium difficile in stool | | | | | Methanol(Blood) | | Any value detected | | mg/dl | | | | | |
| Detection of strongyloides stercoralis larva | | | | | Methanol(urine) | | Any value detected | | mg/dl | | | | | |

CRITICAL VALUES ; This critical result is indicative for an urgent decision and work up; to prevent serious complications.

SEMI CRITICAL ; This semi critical result is indicative for a semi urgent decision and work up; to prevent future complications.

References: www.Aruplab.com , www.mayomedicallaboratories.com ASCP practice parameter, American Society of Clinical Pathologists.