NOOR PATHOBIOLOGY AND GENETIC LABORATORY CRITICAL VALUES

BIOCHEMISTRY

Test na	age	Low	High	unit
Ammonia	<1 y		>100	µmol/l
Ammonia	≥1 y		≥200	µmol/l
Amylase			>250	U/L
Bilirubin(Total)	<1 y		≥15	mg/dl
Calcium		<6.5	>13.0	mg/dl
Calcium (Ionized)	<1 y	≤2.0	≥6.0	mg/dl
Calcium (Ionized)	≤1 y	≤3.0	≥6.5	mg/dl
Tropoin T			>0.1	µg/L
Troponin I			≥0.3	µg/L
Chloride		<80	>115	mEq/L
CPK			≥1000	U/L
Glucose	<4 w	≤40	≥400	mg/dl
Glucose	≥4 w	≤50	≥400	mg/dl
Gestational diabetes Mellitus (GDM), Glucose tolerance 1h, 2h, 3h		<50	>300	mg/dl
Potassium	Adult	<2.8	>6.2	mEq/L
Potassium	<2 m	≤2.5	≥6.0	mEq/L
Magnesium		<1.0	>9.0	mg/dl
Phosphorus		≤1.5	>9.0	mg/dl
Anion Gap			≥30	mmol/L
Sodium		≤120	≥160	mEq/L
Lithium			>1.6	mEq/L
Urea(except dialysis patient)		<5	>100	mg/dl
Creatinine	<4 w		≥1.5	mg/dl
Creatinine	4w-2y		≥2.0	mg/dl
Creatinine	2y-11y		≥2.5	mg/dl
Creatinine	12y-15y		≥3.0	mg/dl
Creatinine	≤16y		≥10	mg/dl
Iron			>500	µg/dl
Osmolality(calculation)		≤240	≥390	mosm/L
P O2 (Arterial)	Adult	≤49.9		mmHg
P O2 (Arterial)	<2 m	<37		mmHg
P CO2(arterial)		≤20	≥60	mmHg
Bicarbonate		<15	>40	mEq/L
pH		≤7.20	≥7.60	
CSF glucose		<30	>300	mg/dl
CSF protein			>45	mg/dl
CSF ACE			>4.0	IU/L
CSF IgG	In OCB band > 4			Band
CSF Alb	Alb index >30			BBB
Lactate			>60	mg/dl
Uric acid			>13.0	mg/dl
Procalcitonin			>2.0	ng/mL
Free T4	<50 Y		≥7.8	ng/dl
Free T4	≥50 Y		≥6.0	ng/dl
Cortisol		<5.0		µg/dl
Prolactin			>2100	mIU/L
T3			>350	ng/dl
T4	Adult		>20	µg/dl
T4	<2 m	<3.5	>18	µg/dl
TSH	<4 d	<1.0	>20	mIU/L
TSH	4d-2y		>10	mIU/L
25 OH vit D		<10	>150	ng/ml
CA 125			>1000	U/ml
Strongly positive test for glucose and ketone in urine				
Presence of reducing sugars in infants in urine				
Presence of pathological crystals (Cysteine , Leucine ,Tyrosine)				
Entamoeba histolytica troph. In stool				
Naegleria & Acanthamoeba in CSF & Eye dis.				
Toxin A&B Clostridium difficile in stool				
Detection of strongyloides stercoralis larva				

IMMUNOLOGY

Test name	age	Low	High	unit
CD4	Absolute count: <200			/µl
C1 inhibitor		<0.09		gr/L
Anti-ds DNA			>300	IU/ml
Pemphigus Ab			≥1/320	titer
AMA			≥1/320	titer
ASMA			≥1/320	titer
Brucella (IgG)			>15	Index
Wright			≥1/320	titer
2ME			≥1/320	titer
CH50		<31.6		U/ml
IgA	Adult	<20		mg/dl
IgE			>2000	IU/ml
IgG	≥1 m	≤200		mg/dl
IgG	2-5 m	≤150		mg/dl
IgG	6-11m	≤200		mg/dl
IgG	1-15y	≤250		mg/dl
IgM		<15		mg/dl
B2 glycpr(IgG)			>50	U/ml
B2 glycpr(IgM)			>20	U/ml
NMO-IgG (CSF)		Positive		
Anti MOG (CSF)		Positive		
VZV-G/M (CSF)		Positive		
Leptospira spp		Positive		
Strep. pneumoniae		Positive		
Wright (CSF)		Positive		
VDRL (CSF)		Positive		
ANA (CSF)		Positive		
Mumps (CSF)		Positive		
Measles (CSF)		Positive		
Brucella(CSF)		Positive		
HAV Ab-IgM		Positive		

TOXICOLGY

Test name	age	Low	High	unit
Acetaminophen			>150	µg/ml
Carbamazepine			>15	µg/ml
Ethosuximide			>150	µg/ml
Phenobarbital	Child		>35	µg/ml
Phenytoin			>20	µg/ml
Primidone			>15	µg/ml
Salicylate			>500	µg/ml
Phenobarbital	Adult		>40	µg/ml
Valproic acid			>150	µg/ml
Cyclosporine	≤6 m		>700	ng/ml
Sirolimus	>6 m		>25	ng/ml
Tacrolimus			>30	ng/mL
Everolimus			>30	ng/mL
Amikacin	>30, 30 min post infusion >8, 30 min before infusion			µg/ml
Ethanol			>250	mg/dl
Vancomycin			>80	µg/ml
Digoxin			>3.0	ng/ml
Gentamycin	>12, 30 min post infusion >2, 30 min before infusion			µg/ml
Theophyline	≤6 m		>20	µg/ml
Theophyline	>6 m		>25	µg/ml
Lead (urine)			>1000	µg/L
Lead (blood)	≤15 y		≥45	µg/dl
Lead (Blood)	>15 y		≥70	µg/dl
Phenylalanin	<2 m		>205	µmol/l
Phenylalanin	Child		>100	µmol/l
Phenylalanin(DBS)			>4.0	mg/dl
Methanol(Blood)	Any value detected			mg/dl
Methanol(urine)	Any value detected			mg/dl

HEMATOLOGY

Test name	age	Low	High	unit
Hb	≥7 w	≤6.0	≥24.0	g/dl
Hb	>7 w	≤6.0	≥20.0	g/dl
Hct		≤21	≥60	%
WBC in Blood		<2.0	>50	10^3/µl
WBC in CSF WBC WBC Synovial	Adult < 17 yrs.		>100 >20 >1000	/µl /µl /µl
Neutrophil (Abs)		<0.5		10^3/µl
Platelet	Adult	<40	>1000	10^3/µl
Platelet	Child	<20	>1000	10^3/µl

COAGULATION

Test name	age	Low	High	unit
PT			>40	Sec.
INR			≥5.0	Sec.
APTT			>150	Sec.
Fibrinogen		≤60		mg/dl
Factor II,V,VIII,XI		≤5		%
Factor VII		≤6		%
Factor X		≤7		%
DRVVT			>42	Sec.
APTT-LA			>45	Sec.
Protein C		<25		%
Protein S		<20		%
APCR		<100		%
ADAMTS-13 activity		<10%		%

MOLECULAR DIAGNOSIS

Test name	Result
CSF PCR for any Organism	Positive
Amniotic fl. PCR for any organism	Positive
Ocular fluid PCR for any organism	Positive
Mumps PCR	Positive
PML-RAR (WB & BMA)	Positive
CMV & BK virus PCR(WB, Urine,..) Transplant patients, Infant < 3 m & patients with immunodeficiency)	Positive
EBV and JC virus	Positive
Parvovirus	Positive
MTHFR mutation	Homozygous
HPV (High risk)	Positive
Chlamydia sp.(Eye samples)	Positive
HSV PCR in genital wound (third trimester), CSF,Amniotic, Eye fluid.	Positive

MICROBIOLOGY

Malaria parasite: seen organism
Blood Parasite: any were seen
Gram stain or acid fast positive for Nocardia
Positive blood ,CSF, other sterile body fluids and biopsy (Liver, kidney, brain, BMB, BMA,…), Abscess, Cornea chip ; Direct & culture
Positive Fungal Direct & Culture for CSF & Blood
Positive culture for group A streptococci (except throat)
Positive culture or isolate for Cryptococcus Neoformance, Bordetella pertussis, Neisseria gonorrhoeae, Dimorphic fungi (Histoplasma, Coccidioidomycosis, Blastomycosis, Paracoccidioidomycosis)
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.)
Positive direct smear & culture for Mycobacterium
Positive culture for streptococcus group A from surgical wound, Legionella, Leptospira,Listeria in pregnant woman and immune-deficient patients,Corynebacteriun diph., Streptococcus B from urine, genital,rectom in pregnant woman,Pseudomonas Aeruginosa & Bacillus sp. from eye discharge,
Organisms with multiple antibiotic resistance
Positive culture for Neisseria meningitis from Blood, CSF, …
Positive culture dialysis fluid

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.

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