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IV PREPERATION GUIDLINE

Adult, neonate, Pedia

Updated 2025

Medication Name	Solvent	Diluent	Adult conc.	Pediatrics conc.	Neonates conc.	Admin.	Stability
Actemara® **Tolicilzumab 400mg/20ml**[6] **Note:Gently invert to mix to avoid foaming**	--	**NS** or 1/2NS withdraw the exact volume & add the exact volume of the solution for adult & pedia.	**Conc**:4mg/ml Use 100 ml bag	**Patient weight < 30 kg**: use 50 ml bag **Patient weight > , = 30 kg:** use 100 ml	**NA**	60 min **NOT given as IV push**	**NS:**[2] RT&Ref:24 hr **1/2 NS:**[6] Ref:24hr&RT:4hr Light sensitive
Acetazolamide 500mg **Diamox®**[4] **Note:MOH guidelines is the only reference for infusion conc.**	5 ml SWFI	NS, D5W or D10W	**IV Push:**100mg/ml[6] **Std.**:5mg/ml[4] **Max**:10mg/ml[4]	**IV Push:**100mg/ml[6] **Std.**:5mg/ml[4] **Max**:10mg/ml[4]	**IV Push Conc:** 100mg/ml[6] (calculate the dose volume from the preparation)	**IV push:**[6] 500 mg over 3 min **Infusion**:[4] 15-30 min	**IV Push:** **Ref**:3day[6] **RT:** 12 hr **Infusion:** **Ref**:24 hr[4]
Acetylcystine **2gram/10ml**[2.6] **Example:** **order=50mg/kg,wt=5kg** **dose=250mg=1.25ml** **Total volume= 3(loading dose)*5=15ml Diluent volume =15-1.25=13.75 ml**	---	**NS,1/2 NS, D5W or SWFI**	**Patient weight range** / **5-20 kg** / **21-40 kg** / **>, =41 kg** / **Rate** **Loading dose** / 3 ml total volume/ kg / Total volume 100 ml / Total volume 200 ml / Over 1 hr **Second dose** / 7 ml total volume/ kg / Total volume 250 ml / Total volume 500 ml / Over 4 hr **Third dose** / 14 ml total volume/ kg / Total volume 500 ml / Total volume 1000 ml(1L) / Over 16 hr				RT:3 hr[2]
Actilyse®50mg **Activase rt-PA®50mg**[2.6] **Alteplase 50 mg** **Note: Do not shake**	Supplied solvent	**NS** only[2]	**Std conc.:**1mg/ml[6] -For other indication e.g: peripheral arterial occlusion, the recommended **minimum Conc.:** 0.2 mg/ml[2]	**Minm**.: 0.5 mg/ml **Std:** 1 mg/ml	**Minm**.: 0.5 mg/ml **Std:** 1 mg/ml	**bolus 10 mg:** 1-2 min, **infusion rate** : 60 - 120 min[2] May be changed based on the indication	RT : 8hr Ref: 24hr
Acyclovir 250 mg[2] **Zovirax®**	10 ml SWFI	NS or D5W	**Std.**:5mg/ml **Max**:7mg/ml	**Std.**:5mg/ml **Max**:7mg/ml	**Std.**:5mg/ml **Max**:7mg/ml	60 min	RT: 24 hr[6] If refrigerated will precipitate[6]
Amikacin 500mg/2ml[2.6] **Amikacin 100mg/2ml**[2.6]	---	NS or D5W	**Minm:** 0.25 mg/ml **Std**: 5 mg/ml	**Minm:**0.25 mg/ml **Std**: 5 mg/ml **Max**:10 mg/ml	**Minm:**0.25 mg/m **Std**: 5 mg/ml **Max**: 10 mg/ml	30-60 min **For neonate:** 1-2 hr[2]	RT.: 24 hr[6] Ref: 60 day[6]
Aminophyllin[6] **250mg/10 ml**	--	NS or D5W	**Conc:** 1mg/ml	**Conc:** 1mg/ml Can be given undiluted	**Conc:** 5mg/ml[5]	Loading dose over 30 min	RT: 24 hr[3] **-For neonate:** **Ref:** 4 day[5]

Amphotericin liposomal 50 mg[2.6] **-Use the supplied filter**	12 ml SWFI **Shake vigorously**	**D5W** only	**Minm:**1mg/ml **Std**: 2mg/ml **Max**: 4mg/ml	**Minm:**0.2 - 0.5 mg/ml **Std.**:1mg/ml **Max**:2mg/ml	**Minm:**0.2 - 0.5 mg/ml **Std.**:1mg/ml **Max**:2mg/ml	2 hr	**As per leaflet:** **Ref:** 7 day **RT**: 2 day Light sensitive

Medication Name	Solvent	Diluent	Adult conc.	Pediatrics conc.	Neonates conc.	Admin.	Stability
Amiodarone [6] **Cordarone® 150mg/3ml** **Note:-centrally. -flush the line before &after admin. With NS**	--	**D5W** only[2]	**Min:**1mg/ml **Std**:1.8mg/ml (450 mg in 250 ml) **Max**:6mg/ml	**Min:**1mg/ml **Std**:1.8mg/ml (450 mg in 250ml) **Max**:6mg/ml	**Min:**1mg/ml **Std**:1.8mg/ml (150 mg in 83.3 ml) **Max**:6mg/ml	**Cont. Infusion** Rate of infusion (mL/hour)=dose (mg/kg/minute)x weight (kg) x 60 minutes divided by the concentration (mg/mL)	RT: 24hr **-in GLASS BOTTEL, TPN bags & in non-PVC bag**
			-For adult: **First dose:** 150 mg (1 amp = 3ml) in 83.3 ml D5W **Second dose:** 360mg (2.4 amp = 7.2 ml) in 200 ml D5W over 6 hr **Third dose:** 540 mg (3.6 amp = 10.8 ml) in 300 ml D5W over 18 hr				
Ampicillin 500 mg[4.6] **Ampicillin 1 gram**[4.6]	5 ml SWFI for **500 mg** & 9.2 ml SWFI for **1 gm**	**NS only**	**Std.**:20 mg/ml **Max**:30 mg/ml	**Std.**:10 mg/ml **Max**:30 mg/ml	**Std.**:20 mg/ml **Max**:30 mg/ml **IV Push**:100 mg/ml	30 -60 min **IV Push (500 mg)** :3-5 min **IV Push (1 gm)**:10-15 min	Ref: **Std.**:2 days **Max**:1 day **IV Push**:1 hr
Artesunate® 60mg[6]	Supplied solvent	---	**Conc**:10mg/ml	**NA**	**NA**	1-2 min	RT:1 hr Light sensitive
Atracurium Atacure®50 mg /5ml[6] **Note:-centrally.**	--	NS, D5W or D5NS	**Std**:0.2mg/ml (50mg in 250ml) **Max**:0.5mg/ml (50 mg in 100ml) **Rate**: 0.3-0.6mg/hr[2] **As per indication**	**Std**:0.2mg/ml (50mg in 250ml) **Max**:0.5mg/ml (50 mg in 100ml)	**Minm** :0.2mg/ml (50 mg in 250ml) **Std:** 0.5mg/ml 500 mcg/ml (50mg in 100ml) **Max**: 5 mg/ml[1]	**Cont. Infusion** Rate of infusion (mL/hour) = dose(mcg/kg/minute) x weight (kg) x 60 minutes divided by the concentration (mcg/mL)	Ref & RT: **NS:** 24hr **D5W:** 8hr[2] **-For neonates minm conc is deviated from lexi as per baby's clinical case**
Augmentin® 1200 mg (Amoclan® or Julmentin®)[4.6] **Amoxicillin sodium/ potassium clavulanate**	20 ml SWFI	**NS** only	**Conc :**12 mg /ml	**Conc :**12 mg /ml	**Conc :**10 mg /ml[1]	30 min	RT: 4 hr Ref: 8 hr

Azithromycin 500 mg Zithromax®	4.8 ml SWFI	NS, D5W or LR	**Std:**1 mg/ml **Max:**2mg/ml	**Std:**1 mg/ml **Max:**2mg/ml	**Std:**1 mg/ml **Max:**2mg/ml	Std:3 hr Max:1 hr	RT:24 hr Ref: 7 days
Aztreonam 1 gram Azactam®.[6,2] **Note: immediately shake vigorously**	10 ml SWFI	NS, D5W or LR	**Conc:** 20 mg/ml	**Conc:** 20 mg/ml	**Conc:** 20 mg/ml	**IV Push**:3-5min **Infusion:** 20-60min	RT: 2 days Ref: 7 days
Benadryl® 50mg/ml Diphenhydramine[6]	--	--	Undiluted or in 50 ml NSS over 10-15 min	Undiluted or in 50 ml NSS over 10-15 min	--	≤ 25 mg/min	-- Infusion:24 hr

Medication Name	Solvent	Diluent	Adult conc.	Pediatrics conc.	Neonates conc.	Admin.	Stability
Benlysta® 120 mg Benlysta® 400 mg Belimumab[6] **Note: to minimize foaming, direct SWFI to the vial side, gently swirl for 60 sec every 5 min until powder dissolve (from 10 to 30 min)**	120 mg with 1.5 ml SWFI, 400mg with 4.8 ml SWFI	NS, 1/2 NS or LR	**Patient weight > 40 kg :** From 250 ml NS bag withdraw the exact volume & add the exact volume of the reconstituted solution **Patient weight ≤ 40 kg :** From 100 ml NS bag withdraw the exact volume & add the exact volume of the reconstituted solution		**NA**	1 hr **NOT given as IV push**	RT:8 hr Ref:8 hr
Caffeine citrate 10mg/ml[6] **Note: The ratio of caffeine citrate to caffeine base is 2:1 (20mg caffeine citrate = 10mg caffeine base)**	--	**D5W** only	**Conc**: 2.4mg/ml (dilute 60 mg in 25 ml D5W)	**Conc**: 2.4mg/ml (dilute 60 mg in 25 ml D5W) **Loading dose**: over 30 min **maintenance dose**:over 10 min	**Loading dose**: over 30 min **maintenance dose**:over 10 min Can be given as **IV Push**: slowly	Over 3-5 min	RT: 24 hr
Caspofungin 50 mg[2]	10.8 SWFI	**NS** only	**Std :**0.2mg /ml **Max**:0.5mg/ml	**Std :**0.14mg /ml **Max**:0.3mg/ml	**Std :**0.2mg /ml **Max :**0.5mg /ml	60 min or **2 hr for higher dose**	RT: 24 hr Ref: 2 days
Cefazoline 1 gram[2.6] Zolecin®, Zepilen®	2.5 ml SWFI	NS or D5W	**Std :**10 mg /ml **Max**:20 mg/ml	**Minm:**10 mg/ml **Std :**20mg /ml **Max**:40 mg/ml	**Std :**10mg /ml **Max**:20 mg/ml	30-60 min	Ref & RT: 1 day[2]
Cefepime 1 gram[4.6] Protec® 1 gram	10 ml SWFI	NS or D5W	**Std :**20 mg /ml **Max**:40mg/ml	**Std :** 20mg /ml **Max**:40mg/ml	**Std :**20 mg /ml **Max**:40mg/ml	30 min	RT:24 hr Ref:7 days
Cefotaxime 1000 mg[6] Foxime® 1 gm	10 ml SWFI	NS or D5W	**Min:**10 mg/ml **Std**:40 mg/ml	**Min:**10 mg/ml **Std**:40 mg/ml **Max**:60 mg/ml	**Std.**:20 mg/ml **Max**:40 mg/ml **IV Push**:100mg/ml	**Infusion**: 15 - 30 min **IV Push**: 3-5 min	RT:24 hr Ref: 5 days[6] Light sensitive for IV push

Ceftazidime 1 gram[4,6] **Zidime1 gm**	10 ml SWFI	NS or D5W	**Std :**20 mg /ml **Max**:40mg/ml	**Std :**20 mg /ml **Max**:40mg/ml	**Std :**20 mg /ml **Max**:40mg/ml	15 - 30 min	Ref: 7 days
Ceftizoxime 1 gram[2,6]	10 ml SWFI	NS or D5W	**Std :** 10 mg /ml **Max**: 20mg/ml	**Std :** 10 mg /ml **Max**: 20mg/ml	**Std :**10 mg /ml **Max**: 20mg/ml	30-120 min	RT:24 hr Ref:4 days
Ceftriaxone 1 gram[6] **Note: do not co-administer with calcium-containing solutions within 48 hr**	9.6 ml SWFI	NS or D5W	**Minm**:10 mg/ml[6] **Std**:20mg/ml **Max**:40mg/ml	**Minm**:10 mg/ml[6] **Std**:20mg/ml **Max**:40mg/ml	**Conc:** 40 mg/ml[5]	**Push**:1-4 min **Infusion:** 30 min	**Push& infusion:** **Ref:**10 days **RT:**2 days

Medication Name	Solvent	Diluent	Adult conc.	Pediatrics conc.	Neonates conc.	Admin.	Stability
Cefuroxime 1.5 gram[2,6] **Cefuroxime 750 mg Zinoxime®,Zinacef® 1gm in100ml.conc:10mg/ml**	15 ml SWFI for **1.5 gm** & 6 ml SWFI for **750 mg**	NS or D5W	**Std :**7.5 - 10 mg /ml **Max**:15 mg/ml	**Conc** : 30 mg/ml	**Conc** :30 mg/ml	30 min	Ref:7 days
		Cefuroxime 750 mg intravitreal : 0.1 ml of conc.(1mg/0.1ml) prepared in DSU OR via the ophthalmologist Reconstitute the vial, then withdraw 1 ml &add 9 ml NS (10ml) ,then withdraw 0.1ml (conc:1mg/0.1ml)					
Cloxacillin 250, 500 mg, 1gram [2..3,6] **Monoclox®**	250 mg..10 ml 500 mg..20ml 1 gm with 20ml **SWFI** [2]	NS or D5W	-As per leaflet :250 mg,500 mg & 1 gm vial can be diluted in **100 ml bag.**[2] **Conc:** 2.5, 5, 10 mg/ml respectively. -As per lexi, **Conc:** 1-2 mg/ml.[6] -As per Trissel **max conc**: 20 mg/ml[3]		**conc :**20 mg /ml[3]	30 - 40 min	**Conc: 1-2 mg/ml** **RT:** 12 hr [3,6] **Max conc:20mg/ml** **Ref**: 24 hr[3] **Others:RT:**48 hr[3]
Colomycin® 2 million unit (150 mg)[6] **Colistimethate**	2 ml[2] SWFI	NS or D5W	**Std :**3 mg /ml[4] **Max**:15 mg/ml[4]	**Std :**1.5 mg /ml[4] **Max**:15 mg/ml[4]	**Std :**3 mg /ml = 40000 unit/ml(BNF)[1]	30 -60 min	**Ref**:24 hr
Colomycin Intrathecal(off-label): 1-NS bag 50 ml aspirate 22 ml & discard,**2**-Reconstitute colomycin vial with 2ml SWFI. **3**-add 2 ml colomycin in the NS bag, total volume=30 ml contains 150 mg(conc=5mg/ml), **4**-withdraw the required dose in a syringe.(usual dose=5mg=1ml, max dose=10mg=2ml)[6]							
Colomycin Nebulization(off-label route): Adult: conc: 3 to 30 mg/ml (volume:5 - 50 ml NS), Pedia: required dose in volume: 2-4 ml NS[6]							
Clindamycin 300 mg[4,6]	--	NS or D5W	**Std :**6 mg /ml **Max**:18 mg/ml	**Std :**6 mg /ml **Max**:18 mg/ml	**Std :**6 mg /ml **Max**:18 mg/ml[5]	30 -60 min	RT: 16 days Ref: 32 days
Cyklokapron 100 mg/ml Tranexamic acid[6]	--	NS or D5W	**Std :**2 mg /ml **Max**:4 mg/ml	**Std :**2 mg /ml **Max**:4 mg/ml	**NA**	Maximum: 100 mg/min	RT:24 hr[3]

Daptomycin 500 mg Docine®[6] **Note:rotate gently to wet powder. Allow for 10 min, then gently swirl to obtain completely reconstituted solution, Do not shake or agitate vial vigorously.**	10 ml NS	NS	**Std:** 10 mg/ml (500 mg in 50 ml)	**Age 1-6 years: Conc:** 20 mg/ml (500 mg in 25 ml) **Age ≥ 7 years: Conc**: 10 mg/ml (500 mg in 50 ml)	**Pt wt ≥ 2 kg: Conc:** 16.7 mg/ml (500 mg in 30 ml)	**IV Push:**2-5min **Infusion: Adult &Age ≥ 7 years**:30 min **Age 1-6 years & neonates:** 60 min	Ref: 48 hr RT: 12 hr GlobalRPH
Dexamethasone 8mg/2ml[4.6] **Note: not recommended to be diluted in adult &pedia**	--	NS or D5W	**Std :**0.16 mg /ml[4] **Max**: 1 mg/ml[4]	**Std :0.1**6 mg /ml[4] **Max**:1 mg/ml[4]	**conc :**0.2 mg /ml (suitable conc for neonates,as per lexi it is for further dilution)	5-30 min	Ref::24 hr[6] Light sensitive
Diclofenac 75mg voltaren®,Rofenac®[2,6]	**As per leaflet and lexi: -Conc:**0.75mg/ml (75 mg + 96.5ml or 496.5 ml) of NS or D5W + 0.5ml Sodium bicarbonate (as buffer),total volume=100 ml or 500 ml , **use immediately**, infused over 30 min to 2 hr, Parenteral preparation is not recommended for pedia and neonates						

Medication Name	Solvent	Diluent	Adult conc.	Pediatrics conc.	Neonates conc.	Admin.	Stability.
Doxapram, Dopram® Myopram 20 mg[2.6]	--	NS . D5W Or D10W	**Depend on the indication:**[6] **Drug-induced CNS depression or post anesthesia : conc**.: 1-2 mg/ml (250mg in 250-125 ml) **COPD-associated hypercapnia:**2.2mg/ml (400 mg/180ml)		**NA**	**post anesthesia**: Start 5mg/ml then 1-3 mg/ml **Acute or chronic respiratory insufficiency** : 1.5-4 mg/ml[2]	RT &Ref: 24 hr[3]
Ecalta® 100 mg[2,6] **Lectra® 100 mg Anidulafungin**	30 ml SWFI	NS or D5W	**Conc:**0.77 mg/ml **Total volume:**130ml (add to100 ml bag)	**Conc:**0.77 mg/ml **Total volume**:130ml (add to100 ml bag)	**Conc:**0.77 mg/ml[5] **Total volume**:130ml (add to100 ml bag)	1.4ml/min over 90 min	**Ecalta®: Ref** : 24 hr[2] **Lectra®: Ref & RT:** 48 hr[6]
Elores® 1.5 gm[2] **Ceftriaxone 1 gm + Sulbactam 500 mg Note:Do not administer with calcium - containing solutions within 48 hr**	10 ml SWFI	NS or D5W	**Conc: 30 mg/ml (1vial in 50 ml)**	**Conc: 30 mg/ml**	**NA**	90 min	**Ref: 36 hr**

Erythromycin 1gram[4.6]	10 ml SWFI	**NS** only	**Std :**1 mg /ml **Max**: 5 mg/ml	**Std :**1mg /ml **Max**:5mg/ml	**Std :**1 mg /ml **Max**: 5 mg/ml	60 min	Ref: 24 hr RT: 8 hr
Fluconazol 2mg/ml[4.5.6]	--	--	--	Calculate volume	Calculate volume	1-2 hr **Max:** 200 mg/hr	--
Famotidine 10 mg/ml[6]	--	NS . D5W, D10W or LR	**IV Push**: 2- 4 mg/ml or undiluted **Infusion:** 0.2 mg/ml		**NA**	**IV Push**:2 min **Infusion:**15-30min	Ref: 2 days RT: 7 days
Fentanyl 100mcg/2ml[4.6] **Note:Naloxone should be available as antidote**	--	NS or D5W	**As per HMG OR Protocol for epidural anesthesia:** 2ml (1amp fentanyl) +38ml NS+10 ml Bucaine.	**Std**:20mcg/ml[4] **Max**:50mcg/ml[4] **Infusion rate:** 1-3 mcg/kg/min	**Conc:**10mcg/ml[5] **Infusion rate:** 1-5 mcg/kg/min	**Push:**3-5 min	RT & Ref : 24hr.
Furosemide **Lasix® 20mg/2ml**[6]	--	NS or D5W	**Conc:**1-2 mg/ml[6] **Undiluted**: 10mg/ml[6]	**Conc :**1-2mg /ml[6] **Undiluted**: 10mg/ml[6]	**IV push:** calculate volume. **Infusion:**2 mg/ml[5] (1amp+8ml)	**Adult:** 4mg/min[2,6] **Neo. &Pedia:** 0.5mg/kg/min[5.6]	RT: 24 hr Light sensitive
Ferosac 100mg/5ml®[2.4] **Iron III hydroxide sucrose complex**	--	**NS only**	**Std :**1 mg /ml **Max** : 2 mg/ml	**Std :**1 mg /ml **Max** : 2 mg/ml Usually in 25 ml	**Std :**1 mg /ml **Max** : 2 mg/ml Usually in 10 ml	1-2 hr	Use immediately
Ferinject **500 mg/10ml®**[2] **Ferric Carboxymaltose**			100-200 mg in 50 ml 201-500 mg in 100 ml 501-1000 mg in 250 ml	--	--	1-2 hr (ADR is reported)	Use immediately

Medication Name	Solvent	Diluent	Adult conc.	Pediatrics conc.	Neonates conc.	Admin.	Stability
Ganciclovir 500 mg[2.6]	10 ml SWFI	NS or D5W	**Std :**5 mg /ml **Max** :10 mg/ml	**Std :**5 mg /ml **Max** :10 mg/ml	**Std :**5 mg /ml **Max** :10 mg/ml	1 hr	Ref: 24 hr
Gentamicin 80mg/2ml[6]	--	**NS only**	**Std :**0.8 mg /ml[6] (1amp in 100ml) **Max** :1.6 mg/ml (1 amp in 50ml)	**Minm**:0.8mg/ml[6] **Std**:1.6mg/ml **Max**:10mg/ml	**Minm**:0.8mg/ml[5.6] **Std**:1.6mg/ml **Max**:10mg/ml Over 30 min	**IV push:** 2-3min[2] **Infusion:** Low dose: 30-60 min[6] High dose: 60-120 min	RT & Ref:[6] 48 hr

Glucagon 1 mg/ml[6] **Glucagen®**	1 ml solvent	NS or D5W	**Conc:**0.08mg/ml	**Conc:**0.08mg/ml	**Std :** 0.04mg/ml= 40 mcg /ml (1mg/25ml) **Max** : 0.08mg/ml= 80mcg/ml (1mg/12.5ml)	**IV Push**: 1min **Neonate**: **Rate**= {dose(mic)*wt (kg)}/conc (mic/ml)	Use immediately
Glypressin 1 mg/8.5 ml Terlipressin®[2]	--	--	**--**	**NA**	**NA**	**Slow IV push**: 1 min,**Not infusion**	--
Heparin[3.4.5.6] **Note:invert the preparation 6 times to avoid heparin pooling Heparin SC to be given over 3-5 min**	--	**NS, 1/2 NS or D5W only**	**Conc:100 unit /ml** 25000 unit in 250 ml	**Conc:100 unit /ml** 25000 unit in 250 m	**Conc:0.5unit/ml in 0.45 NS only**	Neonates: 0.5ml/hr Adult& pedia: acc to the case	RT & Ref: 24 hr[4]

Heparin Flush: the recommended concentration as per lexi and the HMG olaya protocol is :10 unit/ml, there are two different concentrations:

25000unit/5ml

-Aspirate 1ml from 500ml NS bottle & add 1 ml from the vial
-Aspirate 0.5ml from 250ml NS bag & add 0.5ml from the vial
-Aspirate 0.2ml from 100ml NS bag & add 0.2ml from the vial
-Aspirate 0.1ml from 50ml NS bag & add 0.1 ml from the vial

5000unit/5ml

-Aspirate 5ml from 500ml NS bottle & add 5 ml from the vial
-Aspirate 2.5ml from 250ml NS bag & add 2.5 ml from the vial
-Aspirate 1ml from 100ml NS bag & add 1 ml from the vial
-Aspirate 0.5ml from 50ml NS bag & add 0.5 ml from the vial

Hydrocortisone 100mg/2 ml[2.4.6] **Solu-cortef® Ikortef®**	2 ml supplied solvent Or 2 ml SWFI	NS or D5W	**Std :**0.1-1mg /ml **Max** :2-60 mg/ml	**Std :**0.1-1mg /ml **Max** :2-60 mg/ml	**Std :**1mg /ml **Max** :60 mg/ml	**IV push**:[2.6] Dose<500 mg over 30 sec Dose>500 mg over 10 min **Infusion:** 20-30 min	**Solu-cortef®** RT:4 hr[2,5.6] **Ikortef®** Use immediately[2]

Medication Name	Solvent	Diluent	Adult conc.	Pediatrics conc.	Neonates conc.	Admin.	Stability
Hydralazine , Hydrapress®, Apresoline® 20mg[6] **LDR protocol:** 40mg in 40ml	-- 1 ml NS if powder	**NS only**[5]	- **IV push** (if dose <20mg): 1mg/ml - **infusion** (if dose>20mg) : 1mg/ml	**IV push** :1mg/ml **infusion :** 1mg/ml **Rate :**5mg/min	**IV push :**1mg/ml[5] **infusion :** 1mg/ml[5] -Rate based on indication	**IV push**:2min **Infusion adult:** 0.5-10mg/hr	**RT:**24hr[6]
Ibuprofen[6] **Note:there are 3 different brand conc for different indications** **-Lysine salt for Neonates.** **-Prof® 400 mg/4ml** **-Ambafen® 400mg/100ml**	--	-- NS or D5W for **Prof®,, Ambafen®** ready to be administered	**Ambafen®4mg/1ml** **Conc:**4mg/ml[4.6] **Prof ®100mg/ml:** **Std**:0.8mg/ml (4ml in 500ml)[2] **Max**:4mg/ml (4ml in 100ml)[6]	**Ambafen®** **Conc:**4mg/ml[4.6] Calculate volume **Prof ®100mg/ml:** **Std**:0.8mg/ml **Max**:4mg/ml	For PDA closure 1 amp (ibuprofen 10mg/2ml) + 0.5ml NS or D5% (conc=4mg/ml)[6]	10 - 30 min	Light sensitive **For neonates** stability is 30 min after dilution[6] **Prof®:**[2] **RT**:24 hr
Indomethacin 1 mg[2] **Note: preparation is reconstitution only**[2]	1 ml SWFI or NS	--	**Conc:**1 mg/ml	**Conc:**1mg/ml	For PDA closure, reconstitute in 1 ml (conc=1mg/ml)	30 min	RT:24 hr Light sensitive
Insulin (Humulin R)[4.3.6] **Note: Flush the tube with 20 ml of the preparation before infusion start to minimize insulin adsorption (instruct nurses)**	--	NS, 1/2 NS or D5W	**Conc:**1 unit/ml (1 ml in 100 ml)	**Conc:**1 unit/ml (1 ml in 100 ml)	**Std:**0.1unit/ml (0.1 ml in 100 ml) **Max:** 1 unit/ml (1 ml in 100 ml) -The conc is selected based on the case.	Neonate rate= {dose(unit) *wt(kg)}/conc. (unit /ml)	Ref & RT: 2 days[6]
Insulin for hyperkalemia in adult: 10 unit (0.1ml) in 50 ml **D50W** over 15-30 min[6]							
Intralipid 20% **Smoflipid 20%**	**As per IVF intra-lipid infusion protocol :** (intralipid 20% 100 ml) +150 or 400 ml NS (total volume = 250 or 500 ml)				**Initial rate**:100ml/hr for 20 min **Then** : 300 ml/hr.total infusion time 2hr and 15 min		Ref:24 hr[6]
Invanz 1 gm, Ertapenem®[2.6] **Note: Do not use Dextrose**	10 SWFI	**NS only**	**Conc:** 20mg/ ml (1 gm in 50 ml)	**Conc:** 20mg/ ml	**Conc:** 20mg/ ml	**Infusion**:30 min **IV push**: 5 min	RT:6 hr **Ref : 24 hr**
Levetiracetam[6] **Keppra® 500 mg/5ml** **Epitam®500mg/5ml**	--	NS or D5W or LR	**Minm:** 1 mg/ml (1 vial in 500 ml) **Std:** 5mg/ml (1 vial in 100ml) **Max**: 15mg/ml (1 vial in 33.3 ml)	**Minm:** 1 mg/ml (1 vial in 500 ml) **Std:** 5mg/ml (1 vial in 100ml) **Max**: 15mg/ml (1 vial in 33.3 ml)	**NA**	**Std conc:** over 5-15 mim	RT:4hr[6] Ref : 24 hr[2]
Ketrolac 30 mg/ml	--	--	--	--	**NA**	**Adult:**over 15sec Pedia:1-5 min	--
	Off-label use: Continuous infusion over 24hrs x 1 day [90mg/ 1000mL NS - 40 mL/ hour]Ref:24 hr, GRPh						

Medication Name	Solvent	Diluent	Adult conc.	Pediatrics conc.	Neonates conc.	Admin.	Stability
Konakion 10 mg/ml[2] **Or Konakion 2mg/0.2ml**	--	**D5W only**	**Conc**.:0.18mg/ml 1 amp(10mg).+55 ml 5amp (2mg)+55ml	**Conc**.:0.18mg/ml 1 amp.(10 mg)+55 ml 5amp(2mg)+55ml	**2mg/0.2ml amp IV push:1mg/min**	20 min	Use immediately Light sensitive
Levofloxacin 5mg/ml Tavanic®[2.6] **Note:do not co-administer with a solution containing magnesium & calcium.**	--	--	--	Calculate volume	Use of levofloxacin in infants <6 months has not been studied[6]	**250-500 mg:** over 60 min **750 mg:** over 90 min	Light sensitive
Lacosamide Lazure 200 mg/20 ml® Note:if 50 ml bag is used,flush must be done	--	NS ,D5W or LR	**IV push**:directly **Infusion:** with 100 ml diluent	**IV push**:directly **Infusion:** with 100 ml diluent	**NA** Conc:https://medinfogalway.ie/node/2878/printable/print	IV Push: <,= 80 mg/min Infusion: 30-60 min[6]	RT :4 hr[6] Ref: 24 hr[2]
Linezolid 2 mg/ml[4.5.6]	--	--	--	Calculate volume	Calculate volume	20-130 min	Keep it in overwrap
Mannitol 20 % 500 ml[2.6] **(20 gram in 100 ml) (100 gram in 500 ml)**	--	--	--	Calculate volume	Calculate volume	**Adult:** 30-60 min **Pedia & neonate:** 20-30 min	--
	-Crystallized solution due to over saturation can be dissolved by heating in water bath (about 60° C) for 10-20 min, shake repeatedly, then cool						
Meropenem [2.4.6] **Meronem®,Ronem® Archivar®**	20 SWFI for 1 gram & 10 ml for 500mg	NS or D5W	**Conc:**1 to 20 mg/ml	**Conc:**1 to 20 mg/ml	**Conc:**20 mg/ml	30 min	**Ref: NS**:24 hr[2] **D5W**: Use immediately[2]
		Note: For fluid restricted patients(50mg/ml) : can be given directly after reconstitution with 20 ml **SWFI** only but the stability is **3hr at RT** & **12 hr in Ref** [2]					
Methylprednisolon 40, 125, 250, 500, 1000 mg[2.4.6] **Solu-medrol® Note:-Select the conc. Depend on the dose.**	Supplied solvent	NS only, uncertain stability in D5W	**Minm:** 0.2mg/ml (low doses) **Std:** 2mg/ml **Max:** 5-10 mg/ml **As per Dr.order ,e.g:1 gm in 500 ml & 1 gm in 100 or 250 ml**		**NA**	**IV push:**over at least 5 min2 **Infusion: Low dose :** 30 min, **High dose (>1000 mg) :** 60 min - 5 hr	**RT:2 Push:** 24 hr **infusion:** 12 hr **Ref: Push:** 48 hr **Infusion:** 48 hr
Metoclopramide 10 mg/2 ml[4.6] **Premosan®,Primperan®**	--	NS or D5W	**IV push**:directly **Std**: 0.2mg/ml **Max**:0.4mg/ml	**IV push**:directly **Std**: 0.2mg/ml **Max**:0.4mg/ml	**IV push**: directly **Conc**:0.1mg/ml	**IV push**:1-2 min **Infusion**: 15 min	RT:24 hr
Metronidazol 5 mg/ml[4.6]	--	--	--	Calculate volume	Calculate volume	30 - 60 min	Light sensitive

Medication Name	Solvent	Diluent	Adult conc.	Pediatrics conc.	Neonates conc.	Admin.	Stability
Micafungin 100 mg[2,6] **Note:flush line with NS before administration**	5 ml NS or D5W	NS or D5W	**Std:** 0.5mg/ml **Max:** 1.5 mg/ml	**Std:** 0.5mg/ml **Max:** 1.5 mg/ml	**Std:** 0.5mg/ml **Max:** 1.5 mg/ml	1 hr	RT:24 hr Light sensitive
Midazolam 15mg/3ml[6] **Note:Naloxone should be available as antidote.** **-Observe blood pressure of the patient as it cause hypotension**	--	NS or D5W	**Std:** 0.5mg/ml **Max:** 1 mg/ml[4.6] For fluid restricted patient **conc**. of 5mg/ml can be used.	**Conc:**0.5mg/ml[4]	**Conc:**0.5mg/ml[5]	**infusion:** rate depends on the indication, **IV push**: at least 2-5 min	RT:24 hr
Milrinone[6] **Primacor®** **10mg/10ml** **For neonate:** **select the suitable conc depend on each case**	--	NS, D5W, LR or 1/2 NS	**Conc**:200mcg/ml (10 mg in 50ml)[6] **IV push**:10 min[6]	**Conc**:200mcg/ml (10 mg in 50ml)[6] **IV push**:15 min[6]	**Conc**:200mcg/ml (10 mg in 50ml)[5.6] **Loading dose**:[5] over 60 min **infusion**: 0.5-0.75mcg/kg/min Rate may be calculated in the attached equation depending on the clinical case	**Cont. Infusion** Rate of infusion (mL/hour) = dose(mcg/kg/minute) x weight (kg) x 60 minutes divided by the concentration (mcg/mL) For adult & pedia the rate depends on the indication & the case.	RT:[6] 3 day
Monofer 500 mg/5ml® **Ferric Derisomaltose**	--	**NS only**	500 mg, 1 gm and 1.5 gm in 100 ml As per manufacturer	--	--	1-2 hr (ADR is reported)	Use immediately

Medication Name	Solvent	Diluent	Adult conc.	Pediatrics conc.	Neonates conc.	Admin.	Stability
Moxifloxacin , **Avalox®**[2] **Note: flush line with NS, D5W, D10W, or LR before and after admin.**	--	--	--	Calculate volume	Calculate volume	**Over 60 min** **Do not give bolus or rapid infusion**	Do not refrigerate -discard unused portio

Morphine 10 mg/ml[4.6] **Note:Naloxone should be available as antidote**	--	NS or D5W	**For PCA conc 1mg/ml:** 2ml (2amp)+18ml NS[4.6]	**Continuous infusion:** **Std**::0.1mg/ml **Max**:1mg/ml[6] **Intermittent infusion:** **Std**::0.5mg/ml **Max**:5mg/ml[6] **IV Push:**undiluted	**Conc:**0.1mg/ml[6]	**Intermittent infusion:** 15-30 min **Push:**3-5 min	RT:24 hr[4.6]
Nexium 40 mg® (Esomeprazol)[2.6]	5 ml NS	NS, D5W or LR	**Std**::0.4mg/ml[2] (40mg in 100 ml) **Max**:0.8mg/ml[6] (40mg in 50 ml)	**Std**::0.4mg/ml[2] (40mg in 100 ml) **Max**:0.8mg/ml[6] (40mg in 50 ml)	**Std**::0.4mg/ml[2] (40mg in 100 ml) **Max**:0.8mg/ml[6] (40mg in 50 ml)	**Push**: at least 3 min **Infusion**: 10-30 min[2.6]	RT:**NS**:12 hr **D5W:**6hr
Nimbex 20 mg/10 ml®[2] **Cisatracurium**	--	NS or D5W	**Std:** 0.1mg/ml[2] **Max:** 2 mg/ml[2]	**Std:** 0.1mg/ml[2] **Max:** 0.4mg/ml[6]	**Std:** 0.1mg/ml[2] **Max:** 0.4mg/ml[6]	Depend on dose &pt wt.	**Ref & RT:**24hr in PVC bag Use immediately in the available plastic bag in Olaya HMG
Nitroglycerin® Glycerly Trinitrate[6] **50mg/10ml** **<u>For neonate:</u>** **select the suitable conc. depend on each case**	--	NS or D5W	**Std:**200mcg/ml (50mg in 250ml) **Max:**400mcg/ml (100mg/250ml)	**Minm**:100mcg/ml (25mg/250ml) **Std:**200mcg/ml (50mg in 250ml) **Max:**400mcg/ml (100mg/250ml)	**Minm**:100mcg/ml (25mg/250ml) **Std:**200mcg/ml (50mg in 250ml) **Max:**400mcg/ml (100mg/250ml	**<u>Cont. Infusion</u>** Rate of infusion (mL/hour) = dose(mcg/kg/min ute) x weight (kg) x 60 minutes divided by the concentration (mcg/mL)	RT: 24 hr Ref: 14 day **(GRPh) To be prepared in <u>GLASS BOTTE,</u> TPN bags & non-PVC bags**
			<u>For adult & pedia</u> **the rate depends on the indication & the case.**				

Medication Name	Solvent	Diluent	Adult conc.	Pediatrics conc.	Neonates conc.	Admin.	Stability
Ocrevus ® **30 mg/1ml (10ml)** **Ocrelizumab**[2,6] **Note:-use 0.2-0.22 micron inline filter** **-Not given as IV push**	--	NS only	300 mg in 250 ml 600 mg in 500 ml **(withdraw& add exact volume)**	**NA**	**NA**	**2.5 hr or longer** Start 30ml/hr, increase 30 ml/hr every 30 minutes, max 180 ml/hour.	RT: 8 hr Ref: 24 hr **Do not shake**
Octreotide 500 mcg (0.5mg)/5ml®[4.6] **Sandostatin**	--	NS or D5W	**Std:** 0.002mg/ml (2mcg/ml)[6] **Max:** 0.005mg/ml (5mcg/ml)[4]	**Std:** 0.002mg/ml (2mcg/ml)[6] **Max:** 0.005mg/ml (5mcg/ml)[4]	**Std**: 0.01 mg/ml (10 mg/ml)[4] **Max**:0.025 mg/ml (25mcg/ml)[4]	15-30 min	Ref & RT: 24 hr
Omeprazol 40 mg (Risek)®[2.6]	5 ml NS or D5W[6]	NS or D5W	**Conc**:0.4mg/ml (40mg in 100 ml)	**Conc**:0.4mg/ml (40mg in 100 ml)	**Conc**:0.4mg/ml (40mg in 100 ml)	**IV push**:[6] 2.5min **Infusion:**[6] 20-30min	RT:**NS**:12 hr **D5W:**6 hr
Ondansetron Imatox®, Dansetron® 4mg/2ml[6]	--	NS or D5W	**IV push**:directly **Std**: 0.08mg/ml (in 50 ml bag) **Max**:0.4mg/ml	**IV push**:directly **Std**: 0.08mg/ml **Max**:0.4mg/ml	**IV push**:directly **Std**: 0.2mg/ml **Max**:0.4mg/ml	**IV push**: 2-5min **Infusion**: 15-30 min	Ref:24 hr[2.6]
Pantoprazol 40 mg[2] **Pantazol®**	10 ml NS	NS or D5W	**Conc:**0.4mg/ml (40mg in 100 ml)	**Conc:**0.4mg/ml (40mg in 100 ml)	**Conc:**0.4mg/ml (40mg in 100 ml)	15 min **IV Push**: 2min	RT:12 hr[2]
Paracetamol[6] **1gram/100 ml (10mg/ml)** **Paracetol® , Perfelgan®**	--	--	--	Calculate volume	Calculate volume	15 min	--
Penicillin G (benzyl sodium) **500.000 unit-1.000.000 unit**[6]	**500.000 unit** 2.3 ml SWFI **1 million unit** 4.6 ml SWFI	NS or D5W	**Min:**2500 unit/ml **Std**: 5000 unit/ml **Max**:14500unit/ml	**Std**: 5000 unit/ml **Max**:10000unit/ml	**std**:2500 unit/ml[6] **Max**:100.000 unit/ml[5]	15-30 min	Ref:21 days[6]
Phenobarbitone[3.4.5.6] **200 mg/ml**	--	NS , D5W or SWFI	**Conc**: 1mg/ml[4] (1 amp 200 mg in 200 ml)	**Conc**:10 mg/ml (1amp 200 mg in 20 ml SWFI)	**Conc**:10 mg/ml (1amp 200 mg in 20 ml NS)[5]	**Adult: max rate:**60 mg/min **Neonates& pedia: max rate:**30 mg/min[6]	Ref:28 day[3.5,6]

Medication Name	Solvent	Diluent	Adult conc.	Pediatrics conc.	Neonates conc.	Admin.	Stability
Piperacillin 4 gram[6] **Note:to be given 1 hr apart from aminoglycoside**[6]	20 ml SWFI	NS , D5W	**Conc**:50mg/ml	**Conc**:50mg/ml	**Conc**:50mg/ml	20-30 min	Ref:7 days
	As Piperacillin alone as a brand is not available in HMG, so if the doctor's order is Piperacillin alone, the next preparation of (Piperacillin & Tazobactam) is to be followed and Tazobactam portion to be neglected as it is equally distributed through the vial ,unless Piperacillin is available. **Example : if 3gram piperacillin is prescribed , 4gram prepared in 100 ml, so 3gram in ?? ml, apply cross multiplication equation, so the total volume = 75ml after dilution, so the conc=40mg/ml**						
Piperacillin & Tazobactam 4.5 gram (Tazocin)®,(prizma)® & Sandoz®[6] **Note:to be given 1 hr apart from aminoglycoside**[6]	20 ml SWFI	NS , D5W	**Std**: 45mg/ml (4.5gram in 100ml) **Max**:90mg/ml (4.5gram in 50ml)	**Std**: 45mg/ml (4.5gram in 100ml) **Max**:90mg/ml (4.5gram in 50ml)	**Minimum:** 11.25mg/ml **Std**: 45mg/ml **Max**:90mg/ml	30 min	**RT**:24 hr **Ref**:7 days
		Note: For fluid restricted patients : can be given directly after reconstitution with 20 ml SWFI, NS or D5W, **stability**: RT:24 hr or Ref: 48 hr					
Precedex® 200mcg/2ml Serdalert® 200mcg/2ml Dexmedetomidine 100mcg/ml(2ml)	--	NS	**Conc**:4mcg/ml[6] (2ml+48ml) or (4ml+96ml)	**Conc**:4mcg/ml[6] (2ml+48ml)	**Conc**:4mcg/ml[6] (2ml+48ml)	0.2-0.7 mcg/kg/hr[2] **10 - 20 min**	**Ref**:24 hr **RT**: 4 hr
Phenytoin 250 mg/5ml[6] **Note:-flush the line with NS before & after administration.**[1] **-Give only in large vein.**[3] **-IV push is recommended**	--	**NS only**	**Std** : 5mg/ml[6] (250 mg in 50 ml) **Max**:10mg/ml[4] (250 mg in 25 ml)	**Std :** 2mg/ml[4] (250 mg in 125 ml) **Max**:10mg/ml[1] (250 mg in 25 ml)	**Std :** 2mg/ml[4] (250 mg in 125 ml) **Max**:10mg/ml[1] (250 mg in 25 ml)	**IV Push**: 5 min (50mg/min)[4] **Infusion**: adult & pedia:[6] 20mg/min Neonate: 1-3mg/kg/min[5]	RT:2 hr[4] **If refrigerated will precipitate**[3] **-Complete administration within 4 hr.**
Promethazine 25mg/ml (Phenergan)®[6] **Note: -Deep IM route is preferred as IV cause severe tissue damage. -Administer through large vein**	--	NS	**Min:**0.1mg/ml[4] (25mg in 250ml) **Conc**:0.5mg/ml[4] (25mg in 50ml) **Std**:1.25mg/ml[6] (25mg in 20ml) **Max**:2.5mg/ml[6] (25mg in 10ml)	**Min:**0.1mg/ml[4] (25mg in 250ml) **Conc**:0.5mg/ml[4] (25mg in 50ml) **Std**:1.25mg/ml[6] (25mg in 20ml) **Max**:2.5mg/ml[6] (25mg in 10ml)	NA	**Minimum conc**: 30 min **Std conc &max:** 10-15min **Max rate** : 25mg/min	Use immediately

Medication Name	Solvent	Diluent	Adult conc.	Pediatrics conc.	Neonates conc.	Admin.	Stability
Rifampicin 600mg [4.5.6]	10 ml SWFI	NS , D5W	**Std**: 1.2mg/ml[4] **Max**:6mg/ml[4.6]	**Std**: 1.2mg/ml[4] **Max**:6mg/ml[4.6]	**Std**: 3mg/ml[5] **Max**:6mg/ml[5]	3hr[4.6]	RT:[5.6]**NS**:24hr **D5W**:4hr

Medication Name	Solvent	Diluent	Adult conc.	Pediatrics conc.	Neonates conc.	Admin.	Stability
Rocuronium 10mg/ml **Esmeron®[2.6] Rocuron®**	--	NS, D5W , LR or D5W in NS	**Std**: 0.5mg/ml[6] **Max:**2mg/ml[6]	**Std**: 0.5mg/ml[6] **Max:**2mg/ml[6]	**Conc**:1mg/ml[5] **IV push:** 5-10 seconds[5]	**Adult&pedia :** 4-16mcg/kg/min 0.24-0.96 mg/kg/hr **Neonate:** 7-12mcg/kg/min 0.42-0.72 mg/kg/hr	RT & Ref: 24hr[2.6]
Saphnelo **300 mg/ 2 ml®[2,6]** **Anifrolumab**	--	**NS only**	**Conc**:3mg/ml (300mg in 100ml NSS,withdraw& add exact volume)	--	--	30 min	**Ref:** 24 hr **RT:** 4 hr
Scopinal ® **Hyoscine 20mg/ml [6]**	--	NS, D5W, D10W or LR[6]	**Push:**directly[6] **Conc**:0.4mg/ml[4] (20 mg +49 ml)	As per leaflet: not recommended As per lexicomp:IV Push to be given over 2-3 min		**Push**:1ml/min [6] **Infusion:** 30min[4]	**RT:**8hr[6]
Septrin® , Bacterin® **480mg /5ml , 400 mg Sulfa- methoxazole (SMX)+80 mg Trimethoprim(TMP) (co-Trimoxazol)[2.6]** **Note: during infusion time check for precipitation.**	-- **Note:** **Weight-based dosing are based on the (TMP) component**	**D5W only[6]** **Note:** **It is contraind-icated in neonates**	**Standard concentration for regular patients:** 1 amp. (5ml) + 120 ml = total volume 125ml 2 amp. (10ml) + 240ml = total volume 250ml **Or can be**: 1 amp.(5ml)+95ml =100 ml.. **Stability** :4 hr **Maximum concentration for fluid restricted patients:** 1amp. (5ml) + 70ml = 75ml ***Consider dose & volume of pediatric patient.**		**NA in neonat e**	**Standard conc:** Over 60-90 **Max. Conc:** 60 min	**At RT:** **Standard conc:** 6 hr **Max.Conc:** 2hr
Sulperazone®[2] 1 gm & 1.5gm **Cefoperazone sodium 500 mg &1 gm+ 500 mg sulbactam sodium**	**1 gm with 3.4 ml** & **1.5 gm with 3.2 ml** SWFI	NS, D5W	**For 1.5 gm: conc:** 15mg/ml (1 vial in 100 ml) **For 1 gm: conc:** 10 mg/ml (1 vial in 100ml)	**For 1.5 gm: conc:** 15mg/ml **For 1 gm: conc:** 10 mg/ml	**NA**	**Infusion: 15 - 60 min** **IV push: 3 min**	RT: 24 hr
Tigecyclin 50 mg **Tygacil® 50 mg[2,6]** **Note:Flush line with NS, D5w or LR before & after adminstration**	5.3 ml NS, D5W Swirl gently to dissolve	NS, D5W	**Std** : 0.5mg/ml **Max** : 1mg/ml	**Std** : 0.5mg/ml **Max :**1mg/ml	**NA**	**30-60 min**	**RT**: 24 hr **Ref:** 48 hr

Medication Name	Solvent	Diluent	Adult conc.	Pediatrics conc.	Neonates conc.	Admin.	Stability
Teicoplanin, Targocid® 200 mg[2,6] **Note:-reconstitute slowly to avoid foaming** **-The reconstituted solution can be given orally**[2]	3 ml solvent	NS, D5W	**Conc**:2mg/ ml (200 mg in 100ml) **Max:** 4mg/ml (400mg in 100 ml) The conc. reference : Injectable drugs guide	**Conc**:2mg/ ml (200 mg in 100ml) **Max:** 4mg/ml (400mg in 100 ml)	**NA**	**IV push:** 3-5 min **Infusion:** 30 min	Ref:24 hr
Teinam®,lastinem® Imipinem /Cilastatin 500 mg[2.6]	10 ml NS	NS, D5W	**Conc**:5mg/ml	**Conc**:5mg/ml	**Conc**:5mg/ml	500 mg over 30 min	Ref: 24 hr[6] RT: 4 hr[2]
Thiamine 100 mg[6]	--	NS, D5W	**Conc**:1 mg/ml	**Conc**:1 mg/ml	**NA**	30 min	RT:24 hr[3] Light sensitive
Trandate®,Labetalol, 100mg/20ml[6]	--	NS or D5W	**Minm:**1mg/ml **Std:**2mg/ml **Max:**3.75mg/ml	**Conc**:1mg/ml	**Conc**:1mg/ml	**IV push**: 10 mg/min **Infusion:** 0.5-10mg/min	**RT&Ref**: 3 days[6]
Hypertensive emergency in pregnancy or postpartum (including acute-onset hypertension in preeclampsia/eclampsia): **Initial dose:** 10mg - 20mg(2ml - 4ml) over 2 min, additional 40mg-80mg (8 ml - 16ml) can be given at 10 min interval. **Cont. Infusion:** 400mg(4amp=80ml) in 400 ml**, Rate=**1-2 mg/min (60-120ml/hr),as per dr. Order							
Tysabri® 300mg/15 ml Natalizumab[2,6] **Note:monitor patient for any reaction during & 1 hr after infusion**	--	**NS only**	**Conc:** 2.6mg/ml Add to 100 ml NS bag directly	**NA**	**NA**	**60 min** **Not given as IV push**	**RT:** Immediately **Ref:** 8hr
Terbutaline 0.5mg/ml Bricanyl® Medicine .org	--	NS in D5W NS, **D5W**, is of choice	3 - 5 ml (1.5 - 2.5 mg) in 500 ml	3 - 5 ml (1.5 - 2.5 mg) in 500 ml	**NA**	**IV push**: slowly **Infusion**: 0.5 - 1 ml/ min for 8 to 10 hours	**RT:** 7 days[3]
Premature labor cases in LDR, prepared only in **D5W**. NS should be avoided due to the risk of pulmonary edema. **If a syringe pump is available:** the **conc** is **0.1 mg/ml ,**10 ml Bricanyl + 40 ml of D5W **If a syringe pump is unavailable:** the **conc** is **0.01 mg/ml,** 10 ml Bricanyl + 490 ml of D5W							
Unasyn®750mg,1.5gm **Ampicillin and Sulbactam**[2.6]	1.6 ml for 750 mg ,3.2 ml for 1.5 gm SWFI	NS preferred	**Conc:**30mg/ml (1.5 gm in 50 ml) (750 mg in 25 ml) **Max:**45 mg/ml	**Conc:**30mg/ml (1.5 gm in 50 ml) (750 mg in 25 ml) **Max:**45 mg/ml	**NA**	**IV Push:** 10-15 min **Infusion:** 15-30 min	**Ref:** 3 days **Max conc:** 2 days in Ref

Medication Name	Solvent	Diluent	Adult conc.	Pediatrics conc.	Neonates conc.	Admin.	Stability
Valporic acid, Depakine® 400 mg/4ml[6]	--	NS, D5W	**Conc**:8mg/ml[6]	**Std**: 1mg/ml[6] **Max:**8mg/ml[6]	**Std**: 1mg/ml[6] **Max:**8mg/ml[6]	60 min	RT:24 hr **only in glass bottle or TPN bags**
Vancomycin 500 mg[2.5.6] **Colat®**	10 ml SWFI	NS, D5W	**Conc**:5mg/ml	**Conc**:5mg/ml	**Conc**:5mg/ml Over 60 min[5]	According to leaflet rate is not more **10mg/min**	Ref:2days[2]
			Max conc:10mg/ml for fluid restricted patients as per references (lexicomp & Neofax 2014),but it is not recommended to be used due to the side effect of Red-Man Syndrome				
Vasopressin 20 unit/ml, Argipressin[6] **Note: -IM & SC Administer without further dilution - through central line is strongly recommended**	--	NS, D5W	No fluid restriction **Std:** 0.1unit/ml fluid restriction **Max:** 1 unit/ml	**-For lower doses: Conc:**0.04unit/ml **-No fluid restriction: Std:** 0.1unit/ml **-fluid restriction: Max:** 1 unit/ml		Individualize IV infusion rates based on response	**RT**: 18 hr **Ref:** 24 hr
Vfend ®200 mg Voriconazol[2.6] **Note:-give in a separate canula**	19 ml SWFI	NS, D5W, LR, 1/2NS	**Minm** : 0.5mg / ml (1 vial in 400 ml) **Std** : 2 mg / ml (1 vial in 100 ml) **Max** : 5mg /ml (1 vial in 40 ml) **(withdraw, discard & add exact volume)**		**NA**	1-3 hr, not more than **3mg/kg/hr** Do not give as IV push	**Ref:** 24 hr

Medication Name	Solvent	Diluent	Adult conc.	Pediatrics conc.	Neonates conc.	Admin.	Stability
Vyepti® **Eptinezumab**[6] **Note:** **- Flush line with 20 ml NSS** **-Do not shake**	--	**NS Only**	**100 mg dose:** (Withdraw 1 ml from 100 ml NSS bag & add 1 ml) **Conc:** 1 mg/ml **300 mg dose:** (Withdraw 3 ml from 100 ml NSS bag & add 3 ml) **Conc:** 3 mg/ml	**NA**	**NA**	30 min	RT: 8 hr
Xefo 8mg ® **Lornoxicam 8 mg**[2,6]	2 ml supplied solvent	--	Conc: 4mg/ml	**NA**	**NA**	≥15 seconds	**Ref:** 24 hr
Zavicefta® 2.5 gm **Ceftazidime 2 gm and Avibactam 500 mg**[2,6] **Note: Ceftazidime to Avibactam ratio is 4:1, revise dr. Order before dilution.**	10 ml SWFI	NS, D5W, LR	**Minm**: 10 mg/ml (1 vial in 250 ml) **Std:** 25mg/ml (1 vial in 100 ml) **Max**: 50 mg/ml (1 vial in 50 ml)	**Minm**: 10 mg/ml (1 vial in 250 ml) **Std:** 25mg/ml (1 vial in 100 ml) **Max**: 50 mg/ml (1 vial in 50 ml)	**NA**	2 hr	**RT: 12 hr** **Ref: 24 hr**
Zerbaxa® 1.5 gm (Ceftolozane 1 gm + 0.5 gm Tazobactam)[6]	10 ml SWFI	NS, D5W	**Conc**: 15 mg/ml	**Conc**: 15 mg/ml	**NA**	60 min	**RT:** 24 hr **Ref:** 7 day

Medication Name	Solvent	Diluent	Adult conc.	Pediatrics conc.	Neonates conc.	Admin.	Stability
BAT **Botulism Antitoxin, Heptavalent 22 ml** [2,6] **Note:Do not shake the vial during preparation to avoid foaming**	--	**NS Only**	**Rate**				Use immediately
	Conc.: 1:10 1 vial = 22 ml add to 198 ml NS = 220 ml		**Initial (first 30 min)**	**Increament (every 30 min)**	**Maximum**		
		Adult (> 17 years)	0.5 ml/min	Double	2 ml/min		
		Pedia (1-17 years)	0.01 ml/kg/min	0.01 ml/kg/min	0.03 ml/kg/min		
		Infant (< 1 year)	0.01 ml/kg/min	0.01 ml/kg/min	0.0 ml/kg/min		
			For Pedia, do not exced adult rate				

Inotropes

Inotrope Name	Solvent	Diluent	Adult conc.	Pediatrics conc.	Neonates conc.	Admin.	Stability
Adrenaline [6] **Epinephrine (1mg/ml=1000 mcg/ml) Note: to be given centrally or in large vein.**	--	NS, D5W	**Minm:** 1mcg/ml[6] (1mg in 1000ml) **Std**: 4mcg/ml (1mg in 250ml) **Max**:16mcg/ml (4mg in 250ml)	**Minm:** 16mcg/ml[6] (4mg in 250ml) **Std**: 32mcg/ml (8mg in 250ml) **Max**:64mcg/ml (16mg in 250ml)	**minm**:10mcg/ml[6] (1mg in 100ml) **Std**:16mcg/ml (1mg in 62.5 ml) **Std**:32mcg/ml (1mg in 31.25ml) **Max**:64mcg/ml (1mg in 15.6ml)	**Cont. Infusion** Rate of infusion (mL/hour) = dose(mcg/kg/minute) x weight (kg) x 60 minutes divided by the concentration (mcg/ml) For adult & pedia the rate depends on the indication & the case. **- To be given centrally or in large vein.** **-For neonates minm conc for dopamine and dobutamine is deviated from lexi as per baby's clinical case** **For neonate: select the suitable conc depend on each case**	RT& Ref: 24hr
	Epinephrine with Xylocaine 1 % or 2 %: From 50 ml Xylocaine 1% or 2 % aspirate & discard 0.5ml and add 0.5ml adrenaline, total volume=50ml						
Dobutamine 250mg/20ml[6] **Note: as diagnostic agent in Stress echocardiography In cardiology clinic (conc:5 mg/ml)**	--	NS, D5W	**Minm**:500mcg/ml (125 mg in 250ml) **Std:**2000mcg/ml (500 mg in 250ml) **Max:**4000mcg/ml (1000mg in 250ml) **Rate**:According to the case	**Minm**:1000mcg/ml (250 mg in 250ml) **Std:**2000mcg/ml (500 mg in 250ml) **Max:**4000mcg/ml (1000mg in 250ml)	**Minm**:500mcg/ml (12.5 mg{1ml} in 25ml) **Std:**2000mcg/ml (25mg {2ml} in 12.5ml) **Max:**5000mcg/ml (62.5mg {5ml} in 12.5ml)		RT: 24hr[2]
Dopamine Intropin® [6] **200mg/5ml**	--	NS, D5W	**Std**:1600mcg/ml (400mg in250ml) **max**:3200mcg/ml (800mg in250ml) **Rate**:According to the case	**Std**:1600mcg/ml (200mg in 125ml) **max**:3200mcg/ml (400mg in 125ml)	**Minm:**500mcg/ml 40mg{1ml}in 80ml **Std**:1600mcg/ml 40mg{1ml}in25ml **max**:3200mcg/ ml 40mg{1ml}in12.5 ml		RT: 24hr
Nor- Adrenaline, Nor-epinephrine 1mg/ml[6] **Levophed®**	--	D5W	**Std**:16mcg/ml (4mg in 250ml) **Max:**32mcg/ml (8mg in 250ml)	**Std**:8mcg/ml (2mg in 250ml) **Max**:16mcg/ml (4mg in 250ml)	**Std**:10mcg/ml (1mg in 100ml) **conc**:16mcg/ml (1mg in 62.5ml) **Max**:100mcg/ml[5] (1mg in 10ml)		RT:[6] 24hr
Phenylephrine 10mg/ml[6] **Note: central line is preferred**	--	NS, D5W	**Std:** 0.1 - 0.2 mg/ml (10 mg in 100 ml) or (20mg in 100 ml) **Max:** 1 - 2.5 mg/ml (100 mg in 100 ml) or (250mg in 100 ml)	**Std:** 0.1 - 0.2 mg/ml (10 mg in 100 ml) or (20mg in 100 ml) **Max:** 0.4 – 0.6 mg/ml (40 mg in 100 ml) or (60mg in 100 ml)	**NA**	**IV bolus:** 20-30 second **IV Infusion:** Based on the patient case	**Infusion:**[6] RT: 14 day **IV Push:**[6] Ref: 24 hr RT: 4hr

			Note: for IV push must be diluted to total volume 10 ml (1 mg/ml)			

Immuno-globulin rate, different, based on the brand[6]

Bivigam 10%:
Primary humoral immunodeficiency: Initial (first 10 minutes): 0.5 mg/kg/minute (0.3 **mL**/kg/**hour**);
Maintenance: Increase every 20 minutes (if tolerated) by 0.8 mg/kg/minute (0.48 **mL**/kg/**hour)** up to 6 mg/kg/minute (3.6 **mL**/kg/**hour**)

Octagam 10%:
Initial (first 30 minutes):1 mg/kg/minute (0.6 **mL**/kg/**hour**);
Maintenance: Double infusion rate (if tolerated) every 30 minutes up to a maximum rate of 12 mg/kg/minute (7.2 **mL**/kg/**hour**)

Privigen 10%:
Initial: 0.5 mg/kg/minute (0.3 **ml**/kg/**hour**);
Maintenance: Increase gradually (if tolerated) up to 4 mg/kg/minute (2.4 **ml**/kg/**hour**)

Intratect:
Initial rate is not more than 1.4ml/kg/hr for 30 min.
Maintenance: Increase gradually (if tolerated) up to 1.9 ml/kg/minute (2.4 **mL**/kg/**hour**)

Albumin

-**5%:** Do not exceed 2 to 4 ml/minute in patients with normal plasma volume; 5 to 10 mL/minute in patients with hypoproteinemia.

-**20%:** Do not exceed 1 ml/minute in patients with normal plasma volume; 2 to 3 ml/minute in patients with hypoproteinemia.

-Warm to room temperature before use if large volumes are administered.

-Use within 4 hours after entering package; discard unused portion.

-Albumin 20% may be given undiluted or diluted in normal saline.

- Albumin 5% can be prepared from Albumin 20% through Alligation method, in NSS or D5W, with stability of 4 hr before use.

How to use the alligation equation to calculate IV fluid from lower and higher concentration of the same medication?

1-Check for the availability of higher & lowe conc.

2-If all available, think about which will help you to withdraw minimum volumes which is always the highest conc (for higher conc) and the nearest for the desired preparation conc (for lower conc).

3-Consider SWFI for lowest conc. for any preparation (zero %)

Examples:

Dextrose 7.5 %W

-Dextrose 50%W or Dextrose 10%W (higher conc)+ Dextrose 5% or SWFI can be used(lower conc) are all available

-the highest is D50%W & the nearest is D5%W.

-the apply this equation:

D50%W **2.5 (this no. By substraction 5-7.5 regardless to the sign),then multiply in the desired total volume*usually 500ml=27.8ml Divided by the difference between the 2 used conc.(50-5)=45**

D7.5%W

D5%W **42.5 (this no. By substraction 50-7.5regardless to the sign),then multiply in the desired total volume*usually 500ml=472.3ml Divided by the difference between the 2 used conc.(50-5)=45**

Now from 500ml bottle of D5%W withdraw 27.8ml and discard (the remaining is 472.3ml) & add 27.8ml D50W%

-The new concentration you get is

D7.5%W Sodium Chloride 6% W

-Sodium chloride 14.6%W(higher conc.)+ Sodium chloride 3%W or Normal saline 0.9%W or SWFI.

-the highest is Sodium chloride14.6%W & the nearest is Sodium chloride 3%W.

-the apply this equation:

Sodium chloride14.6%W **3(3-6)*the desired volume 10ml=2.59ml 11.6(14.6-3)**

Sodium chloride 6%W

Sodium chloride 3%W **8.6(14.6-6)*the desired volume**

100ml=7.41ml 11.6(14.6-3)

Now withdraw 2.59ml from Sodium chloride14.6%W and add 7.41ml Sodium chloride 3%W, the new conc is Sodium chloride 6%W.

How to use the $C_1V_1 = C_2V_2$ equation to prepare IV fluid?

Example:

Dextrose 10W% 1/5 NS 500ml

1/5NS=Sodium chloride 0.9%W*1/5=Sodium chloride 0.18%W

-Fluid will be used:

Dextrose 10%W 500 ml bottle and Sodium chloride14.6%W bottle

Now apply in this equation:

$C_1V_1 = C_2V_2$

C_1=available conc of Sodium chloride V_1=volume that will be used from it (unknown) C_2=the desired conc.

V_2=the total volume to be prepared (500ml) $C_1V_1 = C_2V_2$

$14.6*V_1 = 0.18*500$

V_1=6.2ml

-Now from 500ml D10W% bottle withdraw 6.2ml & discard then add 6.2 ml from Sodium chloride 14.6%W

Preparation for some commonly used IV fluid based on Alligation Method

IV fluid name	Total Volume	How to prepare?
1/5 Normal Saline (0.18%)	500 ml	Aspirate & discard from SWFI 500 ml bottle (6.2 ml) & add 6.2 ml from NaCl 14.61%
1/4 Normal Saline (0.225%)	500 ml	Aspirate & discard from SWFI 500 ml bottle (7.7 ml) & add 7.7 ml from NaCl 14.61%
1/3 Normal Saline (0.3%)	500 ml	Aspirate & discard from SWFI 500 ml bottle (10.3 ml) & add 10.3 ml from NaCl 14.61%
1/2 Normal Saline (0.45%)*	500 ml	Aspirate & discard from SWFI 500 ml bottle (15.4 ml) & add 15.4 ml from NaCl 14.61%
Normal Saline (0.9%)*	500 ml	Aspirate & discard from SWFI 500 ml bottle (30.8 ml) & add 30.8 ml from NaCl 14.61%
Sodium Chloride 2%	100 ml	86.4 ml SWFI + 13.6 ml NaCl 14.61%
Sodium Chloride 3%*	100 ml	79.5 ml SWFI + 20.5 ml NaCl 14.61%
Sodium Chloride 6%	100 ml	59 ml SWFI + 41 ml NaCl 14.61%
Dextrose 5%*	500 ml	Aspirate & discard from SWFI 500 ml bottle (50 ml) & add 50 ml from Dextrose 50 %
Dextrose 7.5%	500 ml	Method 1:Aspirate & discard from Dextrose 5% 500 ml bottle (27.8ml) & add 27.8 ml from Dextrose 50 % Method 2: Aspirate & discard from SWFI 500 ml bottle (75 ml) & add 75 ml from Dextrose 50 %
Dextrose 10%*	500 ml	Method 1: Aspirate & discard from Dextrose 5% 500 ml bottle (55.6ml) & add 55.6 ml from Dextrose 50 % Method 2:Aspirate & discard from SWFI 500 ml bottle (100 ml) & add 100 ml from Dextrose 50 %
Dextrose 12%	500 ml	Method 1:Aspirate & discard from D10% 500 ml bottle (25 ml) & add 25 ml from Dextrose 50 % Method 2: Aspirate & discard from D5% 500 ml bottle (77.8ml) & add 77.8ml from Dextrose 50 % Method 3: Aspirate & discard from SWFI 500 ml bottle (120 ml) & add 120 ml from Dextrose 50 %
Dextrose 12.5%	500 ml	Method 1:Aspirate & discard from D10% 500 ml bottle (31.25 ml) & add 31.25 ml from Dextrose 50 % Method 2: Aspirate & discard from D5% 500 ml bottle (83.3ml) & add 83.3 ml from Dextrose 50 % Method 3: Aspirate & discard from SWFI 500 ml bottle (125 ml) & add 125 ml from Dextrose 50 %
Dextrose 15%	500 ml	Method 1:Aspirate & discard from D10% 500 ml bottle (62.3 ml) & add 62.5 ml from Dextrose 50 % Method 2: Aspirate & discard from D5% 500 ml bottle (125ml) & add 125 ml from Dextrose 50 % Method 3: Aspirate & discard from SWFI 500 ml bottle (187.5 ml) & add 187.5 ml from Dextrose 50 %
Dextrose 17%	500 ml	Method 1:Aspirate & discard from D10% 500 ml bottle (87.5 ml) & add 87.5 ml from Dextrose 50 % Method 2: Aspirate & discard from D5% 500 ml bottle (133.3 ml) & add 133.3 ml from Dextrose 50 % Method 3: Aspirate & discard from SWFI 500 ml bottle (170 ml) & add 170 ml from Dextrose 50 %
Dextrose 17.5%	500 ml	Method 1:Aspirate & discard from D10% 500 ml bottle (93.75 ml) & add 93.75 ml from Dextrose 50 % Method 2: Aspirate & discard from D5% 500 ml bottle (138.9 ml) & add 138.9 ml from Dextrose 50 % Method 3: Aspirate & discard from SWFI 500 ml bottle (175 ml) & add 175 ml from Dextrose 50 %
Dextrose 20%	500 ml	Method 1:Aspirate & discard from D10% 500 ml bottle (125 ml) & add 125 ml from Dextrose 50 % Method 2: Aspirate & discard from D5% 500 ml bottle (166.7 ml) & add 166.7 ml from Dextrose 50 % Method 3: Aspirate & discard from SWFI 500 ml bottle (200 ml) & add 200 ml from Dextrose 50 %

IV fluid name	Total Volume	How to prepare?
Dextrose 25%	500 ml	Method 1:Aspirate & discard from D10% 500 ml bottle (187.5 ml) & add 187.5 ml from Dextrose 50 % Method 2: Aspirate & discard from D5% 500 ml bottle (222.2 ml) & add 222.2 ml from Dextrose 50 % Method 3: Aspirate & discard from SWFI 500 ml bottle (250 ml) & add 250 ml from Dextrose 50 %
Dextrose 5% 1/5 NS (0.18%)	500 ml	Aspirate & discard from Dextrose 5% 500 ml bottle (6.2 ml) & add 6.2 ml from NaCl 14.61%
Dextrose 5% 1/4 NS (0.225%)	500 ml	Aspirate & discard from Dextrose 5% 500 ml bottle (7.7 ml) & add 7.7 ml from NaCl 14.61%
Dextrose 5% 1/3 NS (0.3%)	500 ml	Aspirate & discard from Dextrose 5% 500 ml bottle (10.3 ml) & add 10.3 ml from NaCl 14.61%
Dextrose 5% 1/2 NS (0.45%)*	500 ml	Aspirate & discard from Dextrose 5% 500 ml bottle (15.4 ml) & add 15.4 ml from NaCl 14.61%
Dextrose 5% NSS	500 ml	Method 1:Aspirate & discard from Dextrose 5% 500 ml bottle (30.8 ml) & add 30.8 ml from NaCl 14.61% Method 2: Aspirate & discard from NS 0.9% 500 ml bottle (50 ml) & add 50 ml from Dextrose 50%
Dextrose 10% 1/5 NS (0.18%)	500 ml	Aspirate & discard from Dextrose 10% 500 ml bottle (6.2 ml) & add 6.2 ml from NaCl 14.61%
Dextrose 10% 1/4 NS (0.225%)	500 ml	Aspirate & discard from Dextrose 10% 500 ml bottle (7.7 ml) & add 7.7 ml from NaCl 14.61%
Dextrose 10% 1/3 NS (0.3%)	500 ml	Aspirate & discard from Dextrose 10% 500 ml bottle (10.3 ml) & add 10.3 ml from NaCl 14.61%
Dextrose 10% 1/2 NS (0.45%)	500 ml	Aspirate & discard from Dextrose 10% 500 ml bottle (15.4 ml) & add 15.4 ml from NaCl 14.61%
Dextrose 10% NSS	500 ml	Method 1:Aspirate & discard from Dextrose 10% 500 ml bottle (30.8 ml) & add 30.8 ml from NaCl 14.61% Method 2: Aspirate & discard from NS 0.9% 500 ml bottle (100 ml) & add 100 ml from Dextrose 50%
Dextrose 7.5% 1/5 NS (0.18%)	500 ml	Prepare Dextrose 7.5 % as mentioned above , then Aspirate & discard from the prepared Dextrose 7.5% 500 ml bottle (6.2 ml) & add 6.2 ml from NaCl 14.61%
Dextrose 7.5% 1/4 NS (0.225%)	500 ml	Prepare Dextrose 7.5 % as mentioned above, then Aspirate & discard from the prepared 7.5 % 500 ml bottle (7.7 ml) & add 7.7 ml from NaCl 14.61%
Dextrose 7.5% 1/3 NS (0.3%)	500 ml	Prepare Dextrose 7.5 % as mentioned above, then Aspirate & discard from the prepared 7.5 % 500 ml bottle (10.3 ml) & add 10.3 ml from NaCl 14.61%
Dextrose 7.5% 1/2 NS (0.45%)	500 ml	Prepare Dextrose 7.5 % as mentioned above, then Aspirate & discard from the prepared 7.5 % 500 ml bottle (15.4 ml) & add 15.4 ml from NaCl 14.61%
Dextrose 7.5% NSS	500 ml	Prepare Dextrose 7.5 % as mentioned above, then: Method 1:Aspirate & discard from Dextrose 5% 500 ml bottle (30.8 ml) & add 30.8 ml from NaCl 14.61% Method 2: Aspirate & discard from NS 0.9% 500 ml bottle (50 ml) & add 50 ml from Dextrose 50%
Dextrose 12 % 1/5 NSS (0.18%)	500 ml	Prepare Dextrose 12 % as mentioned above, then Aspirate & discard from the prepared Dextrose 12% 500 ml (6.2 ml) & add 6.2 ml from NaCl 14.61%
Dextrose 12.5 % NSS (0.9%)	500 ml	Method 1: Prepare Dextrose 12.5 % as mentioned above, then Aspirate & discard from the prepared Dextrose 12.5% 500 ml (30.8 ml) & add 30.8 ml from NaCl 14.61% Method 2: Aspirate & discard from NS 500 ml bottle (125 ml) & add 125 ml from Dextrose 50 %
Dextrose 15% 1/2 NS (0.45%)	500 ml	Method 1: Prepare Dextrose 15 % as mentioned above, then Aspirate & discard from the prepared Dextrose 15% 500 ml (15.4 ml) & add 15.4 ml from NaCl 14.61% Method 2: Aspirate & discard from 1/2 NS 500 ml bottle (187.5 ml) & add 187.5 ml from Dextrose 50 %

Abbreviations:

Admin.=administration
Amp=ampule
Conc=concentration
Cont.=continuous
D5W=Dextrose 5 % in water
D5WNS=Dextrose 5 % in normal saline solution
D10W=Dextrose 10 % in water
HMC=Habib Medical center
Hr=hour
IM=intramuscular
IV=intravenous
IVF=in vitro fertility
Kg=kilogram
LR=Lactated Ringer
max=maximum
mcg=microgram
mg=miligram
min=minutes
Minm=minimum
ml=milliliter
NA=Not Available
No.=number
NS=Normal Saline Solution 0.9% sodium Chloride
Pt.=patient
PVC=polyvinyl chloride
Ref=Refrigerator
RT=Room Temperature
Std=standard
SWFI=Sterile water for injection
Wt.=weight
®=common or/and available brand product
1/2NS=1/2 Normal Saline Solution 0.45% sodium Chloride

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