Neonatologist's Pocket Drug Reference

Third Edition

2010

By

Maged Zakaria

NICU RESIDENT
**Acetylcistein®**
Acetylcysteine 200 mg effervescent sachets

**Dose:** 200 - 400 mg PO up to 3 times daily if necessary.

| Solution concentration | 50 mg/mL. |

**USES**

Meconium ileus.
Mucolytic; lowers the viscosity of the mucous and facilitates its removal by the mucociliary action.

It improves the phagocytic capacity of alveolar macrophages.

**ADVERSE EFFECTS / PRECAUTIONS**

Hypersensitivity-like reactions including rashes and anaphylaxis.
Avoid with peptic ulceration.
**Acyclovir (Zovirax®)**  
250 mg / 5 mL Vial or 200 mg / 5 mL Susp.

**Dose:** 20 mg/kg/dose Q8h IVI over 1h, for 14 days (in localized HSV infections) or 21 days (in disseminated or CNS infections).  
Prolong dosing interval to Q12h in PT < 34 wk PMA, in RF or LCF.  
**Dose:** 75 mg/kg/dose Q12h PO for chronic suppression.

Infusion solution concentration 5 mg/mL.  
Dilution should be used within 24h. **Don’t refrigerate.**

**RENAL IMPAIRMENT**  
Cr Cl 25-50 mL/min/1.73m² ⇒ IV dose Q12h  
Cr Cl 10-25 mL/min/1.73m² ⇒ IV dose Q24h  
Cr Cl 10-25 mL/min/1.73m² ⇒ For HZV PO Q8h  
Cr Cl <10 mL/min/1.73m² ⇒ For HZV or HSV PO Q12h

**USES**  
Neonatal HSV, VZV with CNS and pulmonary involvement.

**MONITOR**  
Periodic CBC.  
Serum concentration 2h after dose is ~2 μg/mL.  
Renal and hepatic function.  
IV site for phlebitis → use more diluted infusion.

**ADVERSE EFFECTS / PRECAUTIONS**  
Neutropenia (20%) → ↓ dose or use Neupogen® if ANC < 500/mm³.  
Phlebitis at IV site (due to alkaline pH of 10).  
Transient renal dysfunction and crystalluria → slow infusion rate, good hydration.
**Adrenaline 1 mg / mL**

**Severe bradycardia, hypotension:** 0.1 - 0.3 mL/kg of 1:10,000 concentration (equal to 0.01-0.03 mg/kg), IV push or IC.

Given via **ETT** in high doses up to 0.1 mg/kg, followed by 1 mL NS.

**IVI:** Start 0.1 μg/kg/min, adjust to desired response, max. of 1 μg/kg/min. **Protect from light. Incompatible with NaHCO₃.**

**Aerosol Therapy:** 0.05-0.15 mL of 1:1000 concentration diluted with NS to 3 mL, Q½h, maximum 4 doses. **Gomella2009**

- 0.05 mL of 1:1000 (1‰) solution contains 1 mg in 1 ml
- 0.15 mL of 1:1000 (1‰) solution contains 1 mg in 1 ml
- 0.05 mL of 1:10,000 solution contains 0.1 mg in 1 ml
- 0.15 mL of 1:10,000 solution contains 0.1 mg in 1 ml

**USES**

Acute cardiovascular collapse. When adequate ventilation and chest compression have failed to increase the HR > 60 bpm.

Short-term use for systemic hypotension.

In older infants, may be used SC to relief of bronchospasm.

**MONITOR**

Heart rate, blood pressure and IV site for signs of infiltration.

**ADVERSE EFFECTS / PRECAUTIONS**

If possible correct acidosis before administration of epinephrine to enhance the effectiveness of the drug.

Hypokalemia and ↑ serum lactate.

Hyperglycemia.

Cardiac arrhythmias (premature ventricular complexes and VT).

Renal vascular ischemia (**add low dose of dopamine with IVI**).

**Bolus→** Severe hypertension with intracranial hemorrhage.

↑ Myocardial oxygen requirement.

IV infiltration causes tissue ischemia and necrosis.
Amikin®
Amikacin 500 mg / 2 mL

**Dose:** as table IVI over 30 min

أميكين (٥٠٠ مجم / ٢ ملم) (٥٠٠ مجم + ٢٤٥ مجم) → سم يكمل حتى ١٠ سم وريد على مدى نصف ساعة / ... ساعة

أميكين (٥٠٠ مجم / ٢ ملم) + ٥٠٤ مجم

**Infusion solution concentration** 5 mg/mL.

Also available in 100 mg per 2 mL vials

IM injection is associated with variable absorption especially in the very small infants.

<table>
<thead>
<tr>
<th>PMA (wk)</th>
<th>Postnatal (d)</th>
<th>Dose (mg/kg)</th>
<th>Interval (h)</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤ 29 *</td>
<td>0-7</td>
<td>18 (3.6 mL)</td>
<td>48</td>
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<tr>
<td></td>
<td>8-28</td>
<td>15 (3 mL)</td>
<td>36</td>
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<tr>
<td></td>
<td>≥ 29</td>
<td>15</td>
<td>24</td>
</tr>
<tr>
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<td>0-7</td>
<td>18</td>
<td>36</td>
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<td></td>
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<td>15</td>
<td>24</td>
</tr>
<tr>
<td>≥ 35</td>
<td>All</td>
<td>15</td>
<td>24</td>
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</table>

* or significant asphyxia, PDA or ttt with indomethacin.

**USES**

G-ve Bacilli - resistant to other aminoglycosides - usually combined with a β-lactam antibiotic (in separate infusion).

**ADVERSE EFFECTS**

Transient and reversible renal tubular dysfunction → ↑ urinary loss of Na, Ca, and Mg.

Vestibular and auditory ototoxicity.

↑Neuromuscular blockade when used with pancuronium and in patients with hypermagnesemia.

**PRECAUTIONS**

The use of other oto- and nephrotoxic drugs (lasix / vancomycin) may ↑ these side effects.
**Amikin®**
Amikacin 500 mg / 2 mL

### SERUM LEVEL
Obtain peak concentration 30 minutes after end of infusion or 1 hour after IM injection and trough level just prior to the next dose, refrigerate blood sample soon.

| Peak: 20-30 µg/mL | Trough: 2-5 µg/mL |

### INTERACTIONS WITH

**Analgesics:** plasma concentration of amikacin and gentamicin possibly ↑ by indomethacin.

**Antibacterials:** ↑ risk of nephrotoxicity and ototoxicity when given with teicoplanin or vancomycin; possible ↑ risk of nephrotoxicity when given with cephalosporins.

**Amphotericin:** ↑ risk of nephrotoxicity.

**Digoxin:** gentamicin possibly ↑ plasma concentration of digoxin.

**Loop Diuretics:** ↑ risk of otoxicity.
Human Albumin 20%

Dose | 5 mL/kg/dose IV over 2 hour.

Indications | As a volume expander 1:3 D₅W
For hypoalbuminemia 1:1 D₅W

Use vial within 4h of opening.

<table>
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<tr>
<th>Indication</th>
<th>IV Dosage</th>
<th>Administration</th>
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<tr>
<td>Hypovolemia</td>
<td>0.5-1 g/kg/dose</td>
<td>Infuse 5% albumin over &gt;60 min, may be infused more rapidly (10-20 min) in hypovolemic shock, repeat as needed</td>
</tr>
<tr>
<td>Hypoalbuminemia</td>
<td>0.5-1 g/kg/dose</td>
<td>Infuse 5% albumin over &gt;2h, repeat q1-2d. Dilutions may be made with NS or D₅W in cases of Na restriction</td>
</tr>
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</table>

USES
Severe hypoalbuminemia associated with low plasma volume and generalized edema where salt and water.
Adjunct in treatment of hyperbilirubinemia by exchange transfusion.
Paracentesis of large volume ascites associated with portal hypertension.

CONTRAINDICATIONS
Cardiac failure.
Severe anemia.

ADVERSE EFFECTS / PRECAUTIONS
Hypersensitivity reactions (anaphylaxis and urticaria).
Nausea and vomiting.
Fever, tachycardia and chills.
**Atropine 1 mg / mL**

**IV or IM:** 0.01-0.03 mg/kg/dose over 1 min, Q10-15min to achieve desired effect, till maximum dose of 0.04 mg/kg.

**ET:** 0.01-0.03 mg/kg/dose immediately followed by 1 mL NS.

**PO:** begin with 0.02 mg/kg/dose Q4-6h, may ↑ gradually to 0.09 mg/kg/dose.

**Infusion solution concentration** 0.1 mg/mL

**USES**

Reversal of severe sinus bradycardia, particularly when parasympathetic influences on heart (digoxin, beta-blockers, hyperactive carotid sinus reflex) predominate.

↓ The muscarinic effects of neostigmine when reversing neuromuscular blockade.

**MONITOR**

Heart rate.

**ADVERSE EFFECTS / PRECAUTIONS**

Cardiac arrhythmias particularly during the first 2 minutes following IV use.

Fever, especially in brain-damaged infants.

Abdominal distension with decreased bowel activity.

Esophageal reflux.

Mydriasis and cycloplegia.
# Atrovent®
Ipratropium Bromide 250-500 μg / 2 mL

**Dose:** 75-175 μg via jet nebulizer Q6-8h

**Dose:** 25 μg/kg/dose via nebulizer Q8h  

<table>
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<th>English</th>
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<td>اتروفنت (250 ميكروجرام/2 سم) ↔ (6.5 سم + 2 سم م) نيبولاتور / 6 - 8 ساعات</td>
<td>Atrovent (250 micrograms/2 mL) ↔ (6.5 mL + 2 mL M) nebulizer / 6 - 8 hours</td>
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<tr>
<td>اتروفنت (500 ميكروجرام/2 سم) ↔ (3.3 سم + 2 سم م) نيبولاتور / 6 - 8 ساعات</td>
<td>Atrovent (500 micrograms/2 mL) ↔ (3.3 mL + 2 mL M) nebulizer / 6 - 8 hours</td>
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## USES

Anti-cholinergic bronchodilator for primary treatment of COPD and adjunctive treatment of acute bronchospasm (peak effect within 1-2h, duration of effect 4-6h).

*Not used for bronchiolitis.*

**Bronchodilator effect may be potentiated when given with β-2 agonist i.e. albuterol. Both drugs are compatible when admixed if given within 1 h.**

## ADVERSE EFFECTS

- Temporary blurring of vision
- Precipitation of narrow-angle glaucoma or eye pain (if solution comes into direct contact with the eyes).
**Augmentin**
Amoxycillin/Clavulanic acid 600 mg / 60 mL

**PT and Neonates < 7 days:** 30 mg/kg IV Q12h  
**Neonate 7–28 days:** 30 mg/kg IV Q8h **BNFC 2009**

Infusion solution concentration 10 mg/mL.  
0.25 mL/kg of the 156 mg/ 5 mL susp. PO Q8h. **BNFC 2009**

**Flumox**
Amoxycillin / Flucloxacillin 500 mg / 5 mL

**Dose:** 100 mg/kg/dose IM Q12h

**USES**
Broad-Spectrum antibiotic against H. influenzae, N. gonorrhea, E. coli, Pneumococci, Streptococci, and certain strains of Staphylococci.

**ADVERSE EFFECTS / PRECAUTIONS**
- Diarrhea, vomiting
- Hypersensitivity reactions, jaundice, fever.
- Pseudomembranous colitis

**RENAL IMPAIRMENT (IV ROUTE)**
- Cr Cl 10-30 mL/min/1.73m² ⇒ use normal initial IV dose then half dose Q12h
- Cr Cl <10 mL/min/1.73m² ⇒ use normal initial IV dose then half dose Q24h

**RENAL IMPAIRMENT (PO ROUTE)**
- GFR 10-30 mL/min/1.73m² ⇒ use normal dose Q12h
- GFR<10 mL/min/1.73m² ⇒ use half normal dose Q12h
Azactam®
Aztreonam 1 g / 50 mL

Dose: 30 mg/kg/dose IV over 5-10 min or IM.

Infusion solution concentration 20mg/mL.

<table>
<thead>
<tr>
<th>PMA Weeks</th>
<th>Postnatal days</th>
<th>Interval hours</th>
</tr>
</thead>
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<td>≤ 29</td>
<td>0-28</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>&gt;28</td>
<td>8</td>
</tr>
<tr>
<td>30-36</td>
<td>0-14</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>&gt;14</td>
<td>8</td>
</tr>
<tr>
<td>37-44</td>
<td>0-7</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>&gt;7</td>
<td>8</td>
</tr>
<tr>
<td>≥ 45</td>
<td>All</td>
<td>6</td>
</tr>
</tbody>
</table>

RENAL IMPAIRMENT
Cr Cl 10-30 mL/min/1.73m² ⇒ use normal initial dose then half dose
Cr Cl <10 mL/min/1.73m² ⇒ use normal initial dose then one-quarter dose

USES
Bactericidal against aerobic G-ve organisms (e.g. E.coli, H.influenza, Pseudomonas, and Serratia). Usually used with ampicillin (empirical) or aminoglycosides (synergistic against Pseudomonas and Enterobacteriaceae).

MONITOR
Serum glucose 1h after administration.
Periodic CBC, AST, ALT.

ADVERSE EFFECTS / PRECAUTIONS
Provide adequate amounts of glucose to avoid hypoglycemia; contains 780 mg L-arginine / g.
Eosinophilia.
↑ Serum ALT, AST.
Phlebitis at the injection site.
# Bebe-vit® Drops

<table>
<thead>
<tr>
<th>Vitamin</th>
<th>Per 1 mL</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>1.500 IU</td>
</tr>
<tr>
<td>D</td>
<td>400 IU</td>
</tr>
<tr>
<td>E</td>
<td>5 mg</td>
</tr>
<tr>
<td>C</td>
<td>40 mg</td>
</tr>
<tr>
<td>Thiamine (B&lt;sub&gt;1&lt;/sub&gt;)</td>
<td>0.5 mg</td>
</tr>
<tr>
<td>Riboflavin (B&lt;sub&gt;2&lt;/sub&gt;)</td>
<td>0.6 mg</td>
</tr>
<tr>
<td>Nicotinamide (B&lt;sub&gt;3&lt;/sub&gt;)</td>
<td>8 mg</td>
</tr>
<tr>
<td>Pyridoxine(B&lt;sub&gt;6&lt;/sub&gt;)</td>
<td>0.6 mg</td>
</tr>
</tbody>
</table>

بيبي فييت - ۱ سم بالفم أو بالرايل / ۴ ساعه
Sodium Bicarbonate 8.4 %

1 mEq NaHCO₃ / mL

**Usual dose:** 1-2 mEq/kg IVI over 30 min.

**Dose (in mEq) based on Base Deficit** = 0.3 × Base deficit (mEq/L) × weight (kg). *Give ½ dose then assess need.*

**Dose (in mEq) based on HCO₃⁻ level** = 0.5 × [24 - serum HCO₃⁻ (mEq/L)] × weight (kg). *Give ½ dose then assess need.*

**Dose in RTA:** 2-3 mEq/kg/day in divided doses for type I and type IV. Proximal RTA (type II) requires larger doses, as high as 10 mEq/kg/day.

Can be administered also by continuous IVI or PO.

**Maximum Concentration** 0.5 mEq/mL.

**Na Content is** 1 mEq/mL.

**Also available as** Sodium Bicarbonate 5 % (0.6 mEq/mL).

**USES**

Documented metabolic acidosis during prolonged resuscitation after establishment of effective ventilation:
- ↓ Pulmonary vascular resistance.
- Improves myocardial function.
- ↑ Response of myocardium to sympathomimetics.

Bicarbonate deficit by renal or GI losses.

**MONITOR**

ABG.

**ADVERSE EFFECTS**

IVH (due to rapid infusion).
- ↑PCO₂ → ↓pH (if given during inadequate ventilation).

Local tissue necrosis.

Hypocalcemia.

Hypernatremia.
## Brufen®
**Ibuprofen 100 mg / 5 mL Syrup**

<table>
<thead>
<tr>
<th><strong>First dose</strong></th>
<th>10 mg/kg</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Second and third doses</strong></td>
<td>5 mg/kg</td>
</tr>
<tr>
<td>Administer IVI by syringe pump over 15 minutes at 24 h interval</td>
<td></td>
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<tr>
<td>Course may be repeated after 48 hours if necessary.</td>
<td></td>
</tr>
</tbody>
</table>

###USES
- Closure of PDA.
- Not indicated for IVH prophylaxis.

###MONITOR
- Urine output.
- Assess for ductal closure.
- Signs of bleeding.

###ADVERSE EFFECTS
- Less severe decrease in UOP than indomethacin.
- Inhibit platelet aggregation.

**Contraindicated in** preterms with infection, active bleeding, thrombocytopenia or coagulation defects, NEC, significant renal dysfunction and duct-dependent systemic blood flow.

###INTERACTIONS WITH
- **Antifungals:** plasma concentration is ↑ by voriconazole.
<table>
<thead>
<tr>
<th><strong>Caffeine Citrate 1 g / 100 mL</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>LD:</strong> 20-25 mg/kg IV over 30 min or <strong>PO</strong></td>
</tr>
<tr>
<td><strong>MD:</strong> 5-10 mg/kg/dose Q24h IV slowly or <strong>PO</strong></td>
</tr>
<tr>
<td>كافيين سيترات شراب (١ جم/١٠٠ سم) لباليه ٣ سم بالفم بعد الرضاعة /٢٤ ساعة</td>
</tr>
</tbody>
</table>

**USES**

Neonatal Apnea, including post-extubation and post anesthesia (antagonizes adenosine →↑ Respiratory center output, chemoreceptor sensitivity to CO₂, smooth muscle relaxation and COP).

**MONITOR**

Serum level on D5 of therapy (5-25 μg/mL).
Monitor HR; withdraw if > 180 bpm.
Agitation.

**ADVERSE EFFECTS**

Restlessness.
Vomiting.
Functional Cardiac symptoms.
May be associated with NEC (not proved).
# Calcium Chloride 10%

**Acute ttt of symptomatic hypocalcemia:** 0.35-0.7 mL/kg/dose IV. Dilute, then infuse over 10-30 min while monitoring for bradycardia. **Stop if HR < 100 bpm.**

**Maintenance ttt:** 0.75-3 mL/kg/day IVI for 3-5 days.

**In exchange transfusion:** 0.33 mL/100 mL blood exchanged, IVI over 10 to 30 min.

*كالسيوم كلورايد ٠١٪* ...

Each 100 mg = 1 mL = 26.7 mg elemental Ca

## USES
Treatment and prevention of hypocalcemia (< 8 mg/dL)

## MONITOR
- Serum Ca level
- Check IV site for extravasation
- Correct ↓Mg if present.
- Bradycardia (IV).
- GI tolerance (PO).

## ADVERSE EFFECTS
- More likely than calcium gluconate to cause metabolic acidosis.
- Bradycardia or cardiac standstill with rapid infusion
- Bolus infusion by UAC is associated with intestinal bleeding and lower-extremity tissue necrosis.
- Infusion by UVC may result in hepatic necrosis if it is lodged in a branch of the portal vein.
**Calcium Gluconate 10%**

**Acute ttt of symptomatic hypocalcemia:** 1-2 mL/kg/dose IV. Dilute, then infuse over 10-30 min while monitoring for bradycardia. **Stop if HR < 100 bpm.**

**Maintenance ttt:** 2-8 mL/kg/day IVI for 3-5 days.

**In exchange transfusion:** 1 mL/100 mL blood exchanged IVI over 10 min.

کالسيوم جلوكونات ٠١٪ ... سم + ... سم ج ٥٪ وريد ببطء شديد /٦ ساعات

Each 100 mg = 1 mL = 10 mg elemental Ca

**USES**

Treatment and prevention of hypocalcemia (<8 mg/dL).

**MONITOR**

- Serum Ca level.
- Check IV site for extravasation.
- Bradycardia (IV)
- GI tolerance (PO)

Early hypocalcemia is common in asphyxiated infants, PT and IDM. It may occur also with alkalosis or following exchange transfusion.

**Signs of hypocalcemia** include muscle twitching, jitteriness, generalized seizures, QTc above 0.4 sec.
### Capoten®
Captopril 25 mg tab.

**Initial Dose:** 0.01 - 0.05 mg/kg/dose PO Q8-12h. Adjust dose and interval based on response. **Administer 1 h before feeding.**

<table>
<thead>
<tr>
<th>كابوتين (½ قرص ٢٥ مجم/١٢.٥ سم ماء مقطر) → شرطة بسريحة انسولين ١٠٠ بالفم قبل الرضاعة بساعة/١٢ ساعة</th>
</tr>
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</table>

**Solution concentration** 1 mg/mL.

### USES
Moderate to severe hypertension.
Afterload reduction in patients with CHF.

### MONITOR
Blood pressure, particularly after the first dose.
Renal function and serum K⁺.

### ADVERSE EFFECTS / PRECAUTIONS
- ↓ Cerebral blood flow (seizures, apnea, and lethargy).
- ↓ Renal blood flow (oliguria).
- ↑ K⁺ (primarily in patients receiving K-sparing diuretics or K supplements).
Contraindicated in patients with bilateral renovascular disease or with unilateral renal artery stenosis in a solitary kidney.

### INTERACTIONS WITH
- **General Anesthetics:** ↑ hypotensive effect.
- **NSAIDs:** ↑ risk of renal impairment, also hypotensive effect antagonized.
- **Antacids:** absorption of ACE inhibitors possibly ↓.
- **Heparins:** ↑ risk of hyperkalemia.
- **Beta-blockers:** ↑ hypotensive effect.
- **Calcium-channel Blockers:** ↑ hypotensive effect.
- **Digoxin:** captopril possibly ↑ plasma concentration of digoxin.
- **Corticosteroids:** hypotensive effect of ACE-i is antagonized.
- **Diazoxide:** ↑ hypotensive effect.
- **Diuretics:** ↑ hypotensive effect; ↑ risk of severe hyperkalemia with K⁺ sparing diuretics and aldosterone antagonists (monitor K⁺ concentration with low-dose spironolactone in heart failure).
- **Potassium Salts:** ↑ risk of severe hyperkalemia.
- **Prostaglandins:** ↑ hypotensive effect.
# Ceclor ®
Cefaclor susp. 125 mg / 5 mL

## For children 1 m - 12 y:
20 mg/kg/day in 3 divided doses, doubled for severe infection (usual max. 1 g daily).

## USES

## ADVERSE EFFECTS

### Most Frequent:
Serum Sickness, Vulvovaginal Candidiasis.

### Less Frequent:
Abdominal Pain with Cramps, Diarrhea, Nausea, Oral Candidiasis, Vomiting.

### Rare:
Allergic Reactions, Anaphylaxis, Angioedema, Drug Fever, Erythema, Erythema Multiforme, Hemolytic Anemia, Hypoprothrombinemia, Pruritus of Skin, Pseudomembranous Enterocolitis, Renal Disease, Seizure Disorder, Skin Rash, Stevens-Johnson Syndrome.
Cefazolin® 1 g / 10 mL

**Dose:** 25 mg/kg/dose **IV slow push or IM.**

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**USES**

It’s a bactericidal 1st generation cephalosporin, mainly G+ve with poor CNS penetration.

Peri-operative infection prophylaxis.

UTI and soft tissue infections caused by e.g. penicillin resistant Staph. aureus, Klebsiella, and Proteus.

**ADVERSE EFFECTS (RARE)**

Phlebitis

Eosinophilia
### Cefdin®
Cefdinir 125 mg / 5 mL susp.

**Dose:** 14 mg/kg/day PO.
Once-daily dosing is as effective as twice daily dosing.

| 시작배양 | 125 مجم / 5 سم | 12 ساعة بالفم / 12 ساعة |

### USES
A 3rd generation cephalosporin that is active against **G-ve** organisms including H. influenza, Enterobacteriaceae, Citrobacter sp., E. coli, Klebsiella and Proteus.

Active against **G+ve** organisms such as Staph. aureus, Staph. epidermidis, strept. pneumonia and Strept. pyogenes.

### ADVERSE EFFECTS (RARE)
- Diarrhea, loose stools
- Nausea, vomiting, abdominal pain
- Abnormal liver tests.
- Allergic reactions.

### Storage
Keep suspension in the fridge for up to 10 days after reconstitution.
# Cetal®

**Acetaminophen 250 mg / 5 mL syrup**

**Oral Dose:** LD 20-25 mg/kg  MD 12-15 mg/kg/dose.

**Rectal Dose:** LD 30 mg/kg  MD 12-18 mg/kg/dose.

**INTERVAL:**
- FT Q6h ... PT ≥ 32 wk GA Q8h ... PT < 32 wk GA Q12h.

**IV Dose**[^BNFC2009]: 7.5 mg/kg Q4-6h; max. 30 mg/kg/day.

Use **Perfalgan®** either undiluted or dilute to a concentration of 1 mg/mL in D₅W or NS; use within 1h of dilution.

## USES

- Fever reduction
- Mild to moderate pain

## MONITOR

- Signs of pain
- Temperature
- Liver function

## ADVERSE EFFECTS

- Liver toxicity (if prolonged > 48h or excessive dosing)
- Rash, fever.
- Thrombocytopenia, leucopenia and neutropenia

## TREATMENT OF TOXICITY

**N-acetylcysteine**

**LD:** 150 mg/kg in D₅W IVI over 30 minutes.

**MD:** 50 mg/kg IVI over 4h then 100 mg/kg over 16h until clinical and biochemical markers of hepatic injury improve (e.g. INR normalizes).
**Chloral Hydrate 500 mg / 5 mL**

**Dose:** 25-75 mg/kg/dose PO or PR.  
Onset within 10-15 min.

**USES**  
Sedative-Hypnotic for short term use only (onset of action within 10-15 minutes).  
No analgesic properties.

**MONITOR**  
Level of sedation.

**ADVERSE EFFECTS / PRECAUTIONS**  
Oral preparation should be diluted or administrated after a feeding to reduce gastric irritation.  
Bradycardia  
**Acute overdose:** CNS, respiratory and myocardial depression, cardiac arrhythmias, ileus and bladder atony.  
Indirect hyperbilirubinemia.  
Don’t use with significant hepatic or renal disease.
## Ciprofloxacin
### Rancif® 200 mg / 100 mL

**Dose:** 10 mg/kg/dose Q12h IV over 30–60 minutes. Treatment is usually continued for 10–14 days

**Infusion solution concentration** 2 mg/mL.

### USES
- Mainly **G-ve;** salmonella, shigella, campylobacter, neisseria and pseudomonas.
- Moderate activity against **G+ve;** Strept. pneumoniae (not used for pneumococcal pneumonia) and Enterococcus faecalis.
- Chlamydia and some mycobacteria.
- Most anaerobes are not susceptible.
- Avoid use with MRSA (resistant).

### MONITOR
Liver function

### ADVERSE EFFECTS / PRECAUTIONS
- Nausea, vomiting, and diarrhea
- Skin rash, or abnormal liver function.
- Fluoroquinolones may damage growing cartilage and cause an arthropathy. Thus not routinely recommended for patients < 18 years of age. However, since the arthropathy is reversible, fluoroquinolones may be used in children in some cases (e.g. for treatment of pseudomonal infections in patients with cystic fibrosis).

### RENAL IMPAIRMENT
- Cr Cl <20 mL/min/1.73m² use half normal dose
Claforan®
Cefotaxime 500 mg / 5 mL

**Dose:** 50 mg/kg/dose **IVI** over 30 min, or **IM**. Dose doubled in severe infection and meningitis.

**Gonococcal Ophthalmia Prophylaxis if mother has gonorrhea at the time of delivery:** 100 mg/kg/dose **IVI** over 30 min once.

**Gonococcal Infections:** 25 mg/kg/dose **IVI** over 30 min, or **IM**.

Infusion solution concentration 100 mg/ml.

RENAL IMPAIRMENT
Cr Cl < 5 mL/min/1.73m² ⇒ use usual initial IV dose then half dose

<table>
<thead>
<tr>
<th>PMA (wks)</th>
<th>Postnatal (D)</th>
<th>Interval (h)</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤ 29</td>
<td>0-28</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>&gt;28</td>
<td>8</td>
</tr>
<tr>
<td>30-36</td>
<td>0-14</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>&gt;14</td>
<td>8</td>
</tr>
<tr>
<td>37-44</td>
<td>0-7</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>&gt;7</td>
<td>8</td>
</tr>
<tr>
<td>≥ 45</td>
<td>All</td>
<td>6</td>
</tr>
</tbody>
</table>

USES
Neonatal meningitis and sepsis by **G-ve** organisms (e.g. E.coli, H.influenza, Klebsiella, Pseudomonas)
Disseminated gonococcal infections.

MONITOR
Periodic CBC.

ADVERSE EFFECTS (RARE)
Rash, Phlebitis and Diarrhea
Leucopenia, granulocytopenia, and eosinophilia.
**Clexane®**  
Enoxaparin sodium (LMWH) 100 mg / mL

### Initial Treatment Of Thrombosis:
- **FT infants** 1.7 mg/kg/dose Q12h SC.  
- **PT infants** 2 mg/kg/dose Q12h SC.  
- **Infants > 3m of age** 1 mg/kg/dose Q12h SC.  
Adjust dose to maintain anti-factor Xa level between 0.5-1 units/mL.

### Low Risk Prophylaxis:
- **Dose** 0.75 mg/kg/dose Q12h SC.  
- **Infants > 3m of age** 0.5 mg/kg/dose Q12h SC.  
Adjust dose to maintain anti-factor Xa level 0.1-0.4 units/mL.

### USES
Anticoagulation.

### MONITOR
Anti-factor Xa 4h after a dose. After attaining target level, dose adjustment is needed 1-2 times/month.  
Signs of bleeding and thrombosis.

### ADVERSE EFFECTS
- Bleeding (even in therapeutic range) 4%.  
- Hematoma at administration site.  
- Compartement syndrome  
- IC and GI hemorrhage.
Colimex®
Colistin Sulphate 50.000 unit / mL

**Dose:** 0.75 mL/kg/dose PO Q8h.

كوليمكس شراب (0.005 وحدة / سم) →... سم بالفم / 8 ساعات

**USES**
Not used for GI infections by oral route but used for gut sterilization.
**Cymevene®**
Ganciclovir 500 mg / 10 mL

**Dose:** 6 mg/kg/dose Q12h IVI over 1h for a minimum of 6 weeks.

**Infusion solution concentration** 10 mg/ml.

**USES**
Prevention of progressive hearing loss in babies with symptomatic congenital CMV infection.

**MONITOR**
CBC every 2-3 days during 1st 3 weeks, then weekly if stable.

**ADVERSE EFFECTS**
Significant neutropenia in majority of patients. Reduce the dose by half if < 500 cells/mm³. Stop if not resolved.

Anemia and thrombocytopenia.
Dalacin-C®
Clindamycin 600 mg / 4 mL

**Dose:** 5-7.5 mg/kg/dose IVI over 30 minutes, or PO.

Dalacin-C® (٠٠٦ مجم / ٤ ضم) (٥.5 سم + ١٤.٥ سم) ... سم وريد على مدى نصف ساعة / ٨ ساعات

**Infusion solution concentration** 5 mg / mL.

<table>
<thead>
<tr>
<th>PMA weeks</th>
<th>Postnatal days</th>
<th>Interval hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤ 29</td>
<td>0-28</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>&gt;28</td>
<td>8</td>
</tr>
<tr>
<td>30-36</td>
<td>0-14</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>&gt;14</td>
<td>8</td>
</tr>
<tr>
<td>37-44</td>
<td>0-7</td>
<td>12</td>
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<tr>
<td></td>
<td>&gt;7</td>
<td>8</td>
</tr>
<tr>
<td>≥ 45</td>
<td>All</td>
<td>6</td>
</tr>
</tbody>
</table>

† Dose interval in significant liver disease.

**USES**
Bacteriostatic for bacteremia, pulmonary and deep tissue infections by *anaerobic* bacteria and some G+ve cocci.
Should NOT be used in ttt of meningitis (poor CSF penetration).

**MONITOR**
Liver function, GI status.

**ADVERSE EFFECTS**
*Pseudomembranous colitis* (Bloody diarrhea, abdominal pain, and fever) → discontinue, bowel rest, TPN, oral metronidazole.
**Decadron® or Fortecortin®**  
Dexamethasone 8 mg / 2 mL

### DART (Dexamethasone: A Randomized Trial) Protocol

<table>
<thead>
<tr>
<th>Dose (mg/kg/dose)</th>
<th>Frequency (Q12h)</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.075</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.05</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.025</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.01</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Given IV slow push or PO Total of 10 days.

**Infusion solution concentration** 1 mg/mL.

### USES

Anti-inflammatory used to facilitate extubation and improve lung function in infants at higher risk for developing CLD.

### ADVERSE EFFECTS

- ↑ Risk of CP. No ↑ in risk of ROP.
- GI perforation and hemorrhage occur more in patients treated beginning in D1 and in those treated concurrently with indomethacin (don’t give them concurrently).
- Hyperglycemia and glycosuria. DKA?
- Hypertension, Na⁺ and water retention.
- **Cardiac effects on D14 include** ↑ LV wall thickness with outflow tract obstruction, transient impairment of LV filling and ST segment depression.
- Hypokalemia, hypocalcemia, Hypertriglyceridemia.
- ↑ Risk of sepsis.
- Renal stones (in patients receiving Lasix®).
- Osteopenia and inhibition of growth
- Adrenal insufficiency due pituitary suppression.
Decadron® or Fortecortin®
Dexamethasone 8 mg / 2 mL

**MONITOR**
- Blood pressure and hyperglycemia during acute illness.
- Lipid profile (hyperlipidemia).
- Guaiac gastric aspirate.
- Echocardiography if treating longer than 7 days.

**INTERACTIONS**

**ACE Inhibitors:** corticosteroids antagonise hypotensive effect.

**Analgesics:** ↑ risk of GI bleeding and ulceration when given with NSAIDs.

**Antibacterials:** metabolism is possibly inhibited by erythromycin.

**Antiepileptics:** metabolism is accelerated by phenytoin (reduced effect)

↑ Risk of hypokalemia when given with amphotericin - avoid concomitant use unless corticosteroids needed to control reactions.

**Barbiturates:** metabolism is accelerated by barbiturates (reduced effect).

**Beta-blockers:** corticosteroids antagonise hypotensive effect.

**Calcium Salts:** corticosteroids reduce absorption.

**Cardiac Glycosides:** ↑ risk of hypokalemia.

**Diazoxide:** corticosteroids antagonise hypotensive effect.

**Diuretics:** corticosteroids antagonize effect; ↑ risk of hypokalemia when given with acetazolamide, loop diuretics or thiazides and related diuretics.

**Sodium Benzoate:** corticosteroids possibly ↓ effects.

**Theophylline:** ↑ risk of hypokalemia.

**Vaccines:** high doses impair immune response to vaccines, avoid concomitant use with live vaccines.

**Hydralazine:** corticosteroids antagonize its hypotensive effect.
### Orazone®
**Dexamethasone 0.5 mg /5 mL**

أورازون شراب (٥ مجم / ٥ سم) – ٢ سم بالفم / ١٢ ساعة

**Phenadone® Syrup** contains 0.5 mg Dexamethasone and 2 mg Chlorpheniramine maleate per 5 mL

### Dexamethasone for Severe BPD

**Begin treatment after D7 but before D14 of life.**

<table>
<thead>
<tr>
<th>Short Course</th>
<th>1</th>
<th>0.1 mg/kg Q12h</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2</td>
<td>0.075 mg/kg Q12h</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>0.05 mg/kg Q12h</td>
</tr>
</tbody>
</table>

May repeat weekly if necessary

<table>
<thead>
<tr>
<th>Long Course</th>
<th>1</th>
<th>0.1 mg/kg Q12h</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2</td>
<td>0.1 mg/kg Q12h</td>
</tr>
</tbody>
</table>

If no response after 48-72h, Stop. If respond, Continue

<table>
<thead>
<tr>
<th></th>
<th>3</th>
<th>0.075 mg/kg Q12h</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>4</td>
<td>0.075 mg/kg Q12h</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>0.05 mg/kg Q12h</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>0.05 mg/kg Q12h</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>0.05 mg/kg Q12h</td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>Off</td>
</tr>
<tr>
<td></td>
<td>9</td>
<td>0.05 mg/kg Q12h</td>
</tr>
<tr>
<td></td>
<td>10</td>
<td>End</td>
</tr>
</tbody>
</table>
**Diamox® or Cidamex®**
Acetazolamide 250 mg tab.

<table>
<thead>
<tr>
<th><strong>Diuretic:</strong></th>
<th>5 mg/kg/dose Q24h IV or PO.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Anticonvulsant:</strong></td>
<td>4-16 mg/kg/day PO divided every 6-8h (not to exceed 30 mg/kg/day or 1 g/day).</td>
</tr>
<tr>
<td><strong>To alkalinate urine:</strong></td>
<td>5 mg/kg/dose PO 2-3 times over 24h.</td>
</tr>
<tr>
<td><strong>To ↓ CSF production:</strong></td>
<td>5 mg/kg/dose IV or PO Q6h increased by 25 mg/kg/day to a maximum of 100 mg/kg/day. Lasix® may be used in combination.</td>
</tr>
</tbody>
</table>

**USES**
Mild diuretic.
Anticonvulsant in refractory neonatal seizures (retards abnormal discharge from CNS neurons).
Decrease CSF production in PHH.
Renal tubular acidosis.

**MONITOR**
Serum electrolytes (contraindicated in ↓K⁺ and ↓Na⁺).
Plasma pH and Chloride.

**ADVERSE EFFECTS / PRECAUTIONS**
GI irritation.
Anorexia.
Transient hypokalemia.
Hyperchloremic metabolic acidosis.
Growth retardation.
Bone marrow suppression, thrombocytopenia, hemolytic anemia, pancytopenia and leucopenia.
Drowsiness, paresthesias.
### Diflucan®
**Fluconazole 100 mg / 50 mL**

<table>
<thead>
<tr>
<th><strong>USES</strong></th>
<th><strong>Systemic infections including meningitis</strong></th>
<th><strong>Prophylactic in VLBW in NICU with high rates of invasive fungal disease</strong></th>
<th><strong>Thrush</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>LD</strong> 12 mg/kg/dose <strong>MD</strong> 6 mg/kg/dose IVI over 30 min or PO</td>
<td><strong>LD</strong> 6 mg/kg on day 1 <strong>MD</strong> 3 mg/kg/dose/24h PO</td>
<td><strong>LD</strong> 6 mg/kg on day 1 <strong>MD</strong> 3 mg/kg/dose/24h PO</td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>2 mg/mL</strong></th>
<th><strong>2 mg/mL</strong></th>
<th><strong>2 mg/mL</strong></th>
<th><strong>1 mg/mL</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Systemic infections including meningitis</strong></td>
<td><strong>Prophylactic in VLBW in NICU with high rates of invasive fungal disease</strong></td>
<td><strong>Thrush</strong></td>
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</tr>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>PMA (wk)</strong></th>
<th><strong>Postnatal (d)</strong></th>
<th><strong>Interval (h)</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>≤ 29</td>
<td>0-14</td>
<td>72</td>
</tr>
<tr>
<td>&gt;14</td>
<td></td>
<td>48</td>
</tr>
<tr>
<td>30-36</td>
<td>0-14</td>
<td>48</td>
</tr>
<tr>
<td>&gt;14</td>
<td></td>
<td>24</td>
</tr>
<tr>
<td>37-44</td>
<td>0-7</td>
<td>48</td>
</tr>
<tr>
<td>&gt;7</td>
<td></td>
<td>24</td>
</tr>
<tr>
<td>≥ 45</td>
<td>All</td>
<td>24</td>
</tr>
</tbody>
</table>

**USES**
Systemic infections, meningitis caused by Candida species

**MONITOR**
Renal function, AST, ALT, CBC for eosinophilia.
# Diflucan®
Fluconazole 100 mg / 50 mL

## ADVERSE EFFECTS / PRECAUTIONS

- **Reversible**: ↑ AST, ALT (in 12%).
- Interfere with metabolism of barbiturates and phenytoin, aminophylline, caffeine, theophylline and midazolam.
- Adjust dosage for impaired renal function.
- Contraindicated with *cisapride* (ppt life-threatening arrhythmias).

## RENAL IMPAIRMENT

- Cr Cl <50 mL/min/1.73m² ⇒ usual initial dose then halve subsequent doses.

## INTERACTIONS WITH

### Analgesics:
- Fluconazole possibly ↑ plasma concentration of fentanyl.

### Antibacterials:
- Metabolism of fluconazole accelerated by rifampicin (↓ plasma concentration).

### Antiepileptics:
- Fluconazole ↑ plasma concentration of phenytoin (consider ↓ dose of phenytoin); voriconazole ↑ plasma concentration of phenytoin, also phenytoin ↓ plasma concentration of voriconazole (↑ dose of voriconazole and also monitor for phenytoin toxicity).

### Antifungals:
- Triazoles possibly antagonise effects of amphotericin.

### Anxiolytics and Hypnotics:
- Fluconazole ↑ plasma concentration of midazolam (risk of prolonged sedation).

### Barbiturates:
- Plasma concentration of voriconazole possibly ↓ by phenobarbital - avoid concomitant use.

### Theophylline:
- ↑ plasma concentration of theophylline.
Digibind®
Digoxin immune Fab (38 mg per vial)

Dose (number of vials) = \( \frac{\text{serum digoxin concentration} \times \text{wt in kg}}{100} \)

Each vial contains 38 mg and will bind 0.5 mg digoxin.

Once administered, digoxin serum concentrations can no longer be determined accurately.

USES
Life threatening digoxin toxicity.

ADMINISTRATION
The contents in each vial to be used should be dissolved with 4 mL of Sterile Water for Injection, by gentle mixing, to give a clear, colorless, approximately isosmotic solution with a protein concentration of 9.5 mg/mL.

Reconstituted product should be used promptly.

If it is not used immediately, it may be stored under refrigeration at 2-8°C for up to 4 hours.

Digibind® is administered by IVI over 30 minutes.
If cardiac arrest is imminent, it can be given as a bolus injection.

STORAGE
Refrigerate at 2° to 8°C.

Unreconstituted vials can be stored at up to 30°C for a total of 30 days.
# Dobutamine

**Dobuject® 250 mg / 5 mL**

**Dose:** 2-25 μg/kg/min IV I. Begin low and titrate by monitoring effect.

<table>
<thead>
<tr>
<th>Volume of drug needed per day</th>
</tr>
</thead>
</table>
| **Dobuject®** or **Dobutrex®** | \( \text{Dose} \times \frac{1.44 \times \text{wt} \times 5}{250} \) **(if using Dobuject®)**  
| \( \text{Dose} \times \frac{1.44 \times \text{wt} \times 20}{250} \) **(if using Dobutrex®)** | **(if using Dobutrex®)** is added to 24 mL D₅W, D₁₀W, NS or LR, given as IV I at a rate of 1 mL/h.

Brands include: **Dobutrex®** 250mg/20mL.

10 μg/kg/min dose is equal to 0.29 mL/kg/24h of **Dobuject®** 250 mg / 5 mL

10 μg/kg/min dose is equal to 1.15 mL/kg/24h of **Dobutrex®** 250 mg / 20 mL

**Incompatible with NaHCO₃, Insulin and furosemide.**

**Incompatible with NaHCO₃, Insulin and furosemide.**

Dilute to a concentration of 0.5–1 mg/mL (max. 5 mg/mL if fluid restricted) with D₅W or NS; infuse higher concentration through CVC only.

**USES**

Hypoperfusion and hypotension, especially if related to myocardial dysfunction.

**MONITOR**

Heart rate and Blood pressure (Peak effect in 10 min).

IV sites for extravasation.

**ADVERSE EFFECTS / PRECAUTIONS**

Hypotension if patient is hypovolemic. Volume loading is recommended before starting dobutamine therapy.

Tachycardia at high dosage

Arrhythmias, hypertension and cutaneous vasodilatation.

Increases myocardial oxygen consumption.

Tissue ischemia occurs with infiltration.
# Dopamine

**Intropin® 200 mg / 5 mL**

**Dose:** 2-20 μg/kg/min IVI.

Begin low and titrate by monitoring effect.

**Volume of drug needed per day** = \( \frac{\text{Dose} \times 1.44 \times \text{wt} \times 5}{200} \) then added to 24 mL D₅W and given as IVI at a rate of 1 mL/h.

\[\text{دوبامين} (٠٠٢ \text{ مجم/} ٥ \text{ ضم}) \longrightarrow \text{شرطة بسرنجة انسولين} ١٠٠ + ٢٤ \text{ سم ج} ٥/٠ \%

5 μg/kg/min is equal to 0.18 mL/kg/24h of Intropin® 200 mg/5 mL

**Incompatible with** NaHCO₃ and Insulin

Dilute to a max. concentration of 3.2 mg/mL with Glucose 5% or Sodium Chloride 0.9%. Infuse higher concentrations through CVC using a syringe pump to avoid extravasation and fluid overload.

## USES

Hypotension.

## MONITOR

- Heart rate
- Blood pressure
- Urine output and peripheral perfusion.
- IV sites for blanching and infiltration.

## ADVERSE EFFECTS / PRECAUTIONS

- Tachycardia and arrhythmias.
- May increase pulmonary artery pressure.
- Reversible suppression of prolactin and thyrotropin secretion.
- Tissue sloughing may occur with IV infiltration.
## Sympathomimetic Amines

<table>
<thead>
<tr>
<th>Drug</th>
<th>Usual dose (μg/kg/min)</th>
<th>Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dopamine</td>
<td>1-5</td>
<td>↑ UOP, ↑ HR (slightly), ↑ Contractility</td>
</tr>
<tr>
<td></td>
<td>6-10</td>
<td>↑ HR, ↑ Contractility, ↑ BP</td>
</tr>
<tr>
<td></td>
<td>11-20</td>
<td>↑ HR, ↑ Contractility, ↑ SVR, ↑ BP</td>
</tr>
<tr>
<td>Dobutamine</td>
<td>1-20</td>
<td>↑ HR (slightly), ↑ Contractility, ↓ SVR</td>
</tr>
<tr>
<td>Epinephrine</td>
<td>0.05-0.50</td>
<td>↑ HR, ↑ Contractility, ↑ SVR, ↑ BP</td>
</tr>
<tr>
<td>Isoproterenol</td>
<td>0.05-1.00</td>
<td>↑ HR, ↑ Contractility, ↓ SVR, ↓ PVR</td>
</tr>
</tbody>
</table>

These infusions may be mixed in IV solutions containing dextrose and/or saline.

**Calculation of a convenient preparation of IVI:**

\[
6 \times \frac{\text{Desired dose} \ \mu g/kg/min}{\text{Desired rate} \ \text{mL/hr}} \times \text{weight (kg)} = \frac{\text{mg drug}}{100 \ \text{mL fluid}}
\]

SVR, systemic vascular resistance; PVR, pulmonary vascular resistance
Dormicum® or Midathetic®
Midazolam 15 mg / 3 mL

**SEDATIVE DOSE:**

**IV (or IM):** 0.05-0.15 mg/kg over at least 5 minutes, repeat as required, usually Q2-4h.

**IVI:** 0.01-0.06 mg/kg/h (↑ after several days of therapy due to tolerance or ↑ clearance).

**Intranasal:** 0.2-0.3 mg/kg/dose using injectable form.

**Sublingual:** 0.2 mg/kg/dose using injectable form mixed with a small amount of flavored syrup.

**ANTICONVULSANT DOSE:**

**LD:** 0.15 mg/kg IV over at least 5 min, followed by

**Maintenance IVI:** 0.06-0.4 mg/kg/h.

Infusion solution concentration: 1 mg/mL.

Incompatible with Sodium bicarbonate.

**USES**

Sedative, hypnotic.

Anesthesia induction.

Treatment of refractory seizures.

**MONITOR**

Respiratory status and Blood pressure

Hepatic function

Signs of withdrawal after prolonged therapy.

**ADVERSE EFFECTS**

Respiratory depression and hypotension, especially when used concurrently with narcotics.

Burning sensation with nasal administration.

Seizure-like myoclonus (8% of PT infants).
**Eltroxen®**
Levothyroxine T<sub>4</sub> 50 μg tab.

**Initial Oral Dose:** 10-14 μg/kg/dose PO Q24h (37.5-50 μg/ dose for an average term infant). Dosage is adjusted in 12.5 μg increments.

**Initial IV Dose:** 5-8 μg/kg/dose Q24h.

**USES**
Hypothyroidism

**MONITOR**
Serum T<sub>4</sub> level after 2 weeks of treatment (10-16 μg/dL in the first year of life). T<sub>3</sub> level should be normal (70-220 ng/dL) and TSH should have declined from initial value.

After 12 weeks of treatment, serum TSH should be in the normal range < 15 mU/L.

Measure T<sub>4</sub> and TSH at 2 weeks of age, then every 1-2 months or 2 weeks after any change in dosage.

**Signs of hypothyroidism:** lethargy, poor feeding, prolonged neonatal jaundice, constipation, intermittent cyanosis.

**Signs of thyrotoxicosis:** hyperactivity, altered sleep pattern, tachycardia, tachypnea, fever, exophthalmos and goiter.

Growth, development and bone-age advancement.

**ADVERSE EFFECTS**
Prolonged overtreatment can produce premature craniosynostosis and acceleration of bone age.
# Epanutin® or Ipanten®

Phenytoin IV 250 mg / 5 mL  
Phenytoin PO 30 mg / 5 mL

**LD:** 15-20 mg/kg IVI over at least 30 min.  
**MD:** 4-8 mg/kg Q24h IV slow push or PO.  
**Up to:** 8 mg/kg/dose Q8-12h after 1 week of age.  
Flush IV with saline before and after administration.  
Avoid use in central lines; may precipitate. **Not to be given IM.**

<table>
<thead>
<tr>
<th>Maximum rate of infusion</th>
<th>0.5 mg/kg/min</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infusion solution concentration</td>
<td>5 mg / mL</td>
</tr>
<tr>
<td>Incompatible with</td>
<td>D₅W, D₁₀W.</td>
</tr>
</tbody>
</table>

**USES**  
Anticonvulsant for seizures refractory to phenobarbital.

**HEPATIC IMPAIRMENT**  
Reduce dose.

**MONITOR**  
Bradycardia, arrhythmias and hypotension during infusion.  
IV site for extravasation.  
Serum therapeutic level is 6-15 μg/mL in the 1st weeks, then 10-20 μg/mL due to change in protein binding.  
Bilirubin displaces phenytoin from protein-binding sites, resulting in increased free drug.

**ADVERSE EFFECTS**  
Extravasation → inflammation and necrosis.  
Hypersensitivity reactions.  
High serum concentration is associated with seizures.  
**With long term therapy:** Arrhythmias, hypotension, gingivitis, nystagmus, rickets, hyperglycemia, and hypoinsulinemia.
## Epoetin alpha
Eprex® 2000 iu/ 0.5 mL

**Dose:** 200-400 iu/kg/dose, 3-5 times per week for 2 to 6 weeks. Total dose per week is 600-1400 iu/kg

**Short course:** 300 iu/kg/dose daily for 10 days.

Administer **SC** or **IVI** (over $\geq$ 4h or continuously in TPN).

**Supplemental iron, adequate proteins and Vit-E should be initiated concurrently.**

| ايبيركس (٠٠٠٢ وحدة /٥ .٠ مل) | شرطة تحت الجلد يوم بعد يوم |

**For IVI:** Dilute in 2 mL of solutions containing at least 0.05% protein and infuse over 4 hours. Stable for 24h.

<table>
<thead>
<tr>
<th><strong>USE</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>USE</strong></td>
<td>Stimulate erythropoiesis and ↓ the need for PRBCs transfusion in high risk preterms.</td>
</tr>
<tr>
<td><strong>USE</strong></td>
<td>The most likely to benefit are ELBW &lt; 800 gm with phlebotomy losses $&gt;$ 30 ml/kg.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>MONITOR</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MONITOR</strong></td>
<td>Weekly CBC to check for neutropenia and RBC response.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>ADVERSE EFFECTS / PRECAUTIONS</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ADVERSE EFFECTS / PRECAUTIONS</strong></td>
<td>Neutropenia (rare, resolves with discontinuation of the drug).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>STORAGE</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>STORAGE</strong></td>
<td>Store between 2-8°c.</td>
</tr>
<tr>
<td><strong>STORAGE</strong></td>
<td>Don’t shake.</td>
</tr>
<tr>
<td><strong>STORAGE</strong></td>
<td>Undiluted epoetin is stable plastic syringes for 2 weeks.</td>
</tr>
</tbody>
</table>
**Erythromycin**
Erythrocin® 200 mg / 5 mL

**Dose for treatment and prophylaxis of Pertussis and for C. trachomatis Conjunctivitis and Pneumonitis:** 12.5 mg/kg/dose PO Q6h for 14 days.

**Dose for other infections and prophylaxis:** 10 mg/kg/dose PO Q6h.

**Feeding intolerance due to dysmotility:** 10 mg/kg/dose PO Q6h for 2 days followed by 4 mg/kg/dose PO Q6h for 5 days.

---

**USES**
Infections by Chlamydia, Mycoplasma, and Ureaplasma.
Treatment and prophylaxis for Bordetella pertussis.
Substitute for penicillin in allergic intolerance.
Prokinetic agent (motilin-receptor agonist) in feeding intolerance.

**MONITOR**
Diarrhea and abdominal discomfort.
CBC for eosinophilia.

**ADVERSE EFFECTS / PRECAUTIONS**
Loose stools.
Intrahepatic cholestasis.

x10↑ risk of hypertrophic Pyloric stenosis in neonates under 2 wks of age.

↓ Plasma clearance of midazolam (*Dormicum®*) by 50%

↑ Serum concentration of digoxin, midazolam, theophylline and carbamazepine.
**Fentanyl-Janssen® (50 μg /mL)**

**Sedation and Analgesia:** 0.5-4 μg/kg/dose IV slow push, repeat as required, usually Q2-4h.

**Infusion rate:** 1-5 μg/kg/h (quickly develop tolerance).

**Anesthesia:** 5-50 μg/kg/dose.

**Infusion solution concentration** 2 μg / mL.

**For a dose of 2 μg/kg, give 1 mL/kg**

Stable for 24h refrigerated after dilution.

**Protect from light.**

**USES**

Analgesia, sedation.

Anesthesia.

**MONITOR**

Respiratory and cardiovascular status.

Abdominal distension, loss of bowel sounds

Muscle rigidity.

**ADVERSE EFFECTS**

Respiratory depression with anesthetic dose > 5 μg/kg.

Chest wall rigidity with laryngospasm, reversible with naloxone.

Urinary retention with continuous infusion.

Tolerance to analgesic doses.

Withdrawal symptoms after IVI for 5 days or longer.
Ferose® or Hydroferrin®
Iron Polymaltose Complex

For growing PT infants: 2 mg/kg/day (max. 15 mg/day), begin after 2 weeks of age.
< 1,000 kg birth weight: 4 mg/kg/day.
If receiving erythropoietin: 6 mg/kg/day.
In 1 or 2 doses, diluted in formula.

| فروز شراب (٠٥ مجم /٥ سم)  ... سم مع الرضاعة /٢٤ ساعة |
| هيدروفيريً هقط (٠٥ مجم /ضم)  ... نقطة مع الرضاعة /٤٢ ساعة |

Each Hydroferrin® drop contains 1.67 mg elemental iron.

USES
Iron supplementation for prevention and treatment of anemia.

MONITOR
Hemoglobin and reticulocyte counts during therapy
Observe stools.
Check for constipation.

ADVERSE EFFECTS / PRECAUTIONS
In growing PT infants, iron supplementation should not be started until adequate vitamin E is supplied in diet: otherwise iron may ↑ hemolysis.
Nausea, constipation, black stools, erosion of gastric mucosa.
Lethargy.
Hypotension.
Flagyl®
Metronidazole 500 mg / 100 mL

**LD:** 15 mg/kg PO or IVI over 1h  
**MD:** 7.5 mg/kg/dose PO or IVI over 1h

 فلاجيل (٠٠٥ مجم / ٠٠١ ضم) → ... سم + ... سم ج 5% وريد على مدى ساعة ثم بعد ... ساعة → ... سم + ... سم ج 5% وريد /... ساعة على مدى ساعة
 فلاجيل شراب (١٢٥ مجم / ٥ سم) → ... سم بالفم /... ساعة

**Na content is** 14 mEq per 100 mL.  
**Infusion solution concentration** 5 mg/ml.

<table>
<thead>
<tr>
<th>PMA (wk)</th>
<th>Postnatal (d)</th>
<th>Interval (h)</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤ 29</td>
<td>0-28</td>
<td>48</td>
</tr>
<tr>
<td></td>
<td>&gt;28</td>
<td>24</td>
</tr>
<tr>
<td>30-36</td>
<td>0-14</td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>&gt;14</td>
<td>12</td>
</tr>
<tr>
<td>37-44</td>
<td>0-7</td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>&gt;7</td>
<td>12</td>
</tr>
<tr>
<td>≥ 45</td>
<td>All</td>
<td>8</td>
</tr>
</tbody>
</table>

**HEPATIC IMPAIRMENT**  
Reduce total daily dose to one third and give once daily  
Use with caution in hepatic encephalopathy

**USES**  
Meningitis, ventriculitis and endocarditis caused by Bacteroides fragilis and other anaerobes resistant to penicillin.  
Serious intra-abdominal infections and C. difficile colitis.  
T. vaginalis infections.

**ADVERSE EFFECTS / PRECAUTIONS**  
Carcinogenic?!!  
Seizures, sensory polyneuropathy.  
Brownish discoloration of urine.
# Folic Acid

**Folicap® 500 μg tab.**

**Dose:** 15 μg/kg/dose or up to maximum 50 μg/day **PO,** deep IM, IV or SC.

<table>
<thead>
<tr>
<th>USES</th>
<th>Megaloblastic and macrocytic anemia as a result of folate deficiency.</th>
</tr>
</thead>
</table>

|MONITOR| Hematocrit  
Hemoglobin  
Reticulocyte|
|---|---|

|ADVERSE EFFECTS / PRECAUTIONS| May mask hematological defects of Vit B₁₂ deficiency, but it will not prevent the progression of irreversible neurologic abnormalities.  
GI upset  
Slight flushing  
May decrease phenytoin serum concentration.  
Contraindicated in pernicious, aplastic and normocytic anemia|
|---|---|
**Fortum®**
Ceftazidime 1 g / 40 mL

**Dose:** 30 mg/kg/dose **IVI** over 30 min, or **IM**.

فوسرام (١ جم / ٠٤ ضم م م)  سموريه على مدى نصف ساعة / ساعه
فوسرام (٠٠٥ مجم / ٢ ضم)  سم عضل / ساعه

**Infusion solution concentration** 25mg/ml.
**Also available as** 250 mg and 1 g vials

<table>
<thead>
<tr>
<th>PMA weeks</th>
<th>Postnatal days</th>
<th>Interval hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤ 29</td>
<td>0-28</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>&gt;28</td>
<td>8</td>
</tr>
<tr>
<td>30-36</td>
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<td></td>
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<td></td>
<td>&gt;7</td>
<td>8</td>
</tr>
<tr>
<td>≥ 45</td>
<td>All</td>
<td>6</td>
</tr>
</tbody>
</table>

**USES**
Neonatal meningitis and sepsis by G-ve organisms (e.g. E.coli, H.influenza, Neisseria, Klebsiella, and Proteus species), esp. Pseudomonas aeruginosa.
Synergistic with aminoglycosides

**ADVERSE EFFECTS (UNCOMMON)**
Rash, Eosinophilia
Diarrhea, ↑ Hepatic ALT, AST.
Positive Coombs’ test.
### Fungizone®
#### Amphotericin-B 50 mg / 10 mL

**Dose:** 0.5-1 mg/kg IVI over 2-6h Q24h

**Dose:**
- **Initial dose:** 0.25-0.5mg/kg IVI over 4-6h.
- **MD:** 0.5-1 mg/kg IVI over 2-6h Q24-48h for 2-6 wks or longer.

**Infusion solution concentration** 0.1 mg/mL.

**Don’t mix with NS.**

**Protect from light.**

### USES
- Systemic fungal infections.
- Severe superficial mycoses.

### MONITOR
- CBC, liver function every week.
- Serum creatinine, BUN, Electrolytes and UOP.
- IV sites for irritation.

### ADVERSE EFFECTS / PRECAUTIONS
- ↓ RBF and GFR by 20-60%.
- ↑ K⁺ and Mg loss due to tubular injury, ↓ reabsorption of Na. Na intake > 4 mEq/kg/day may prevent nephrotoxicity.
- Anemia, thrombocytopenia.
- Consider analgesia before infusion.
- Nausea, vomiting
- Fever, chills
- **Discontinue if** BUN > 40 mg/dL, serum creatinine is > 3 mg/dL, or liver function tests are abnormal.
- **If creatinine increases > 0.4 mg/dL during therapy,** hold dose for 2-5 days.
## INTERACTIONS WITH

**Antibacterials:** ↑ risk of nephrotoxicity when given with aminoglycosides; possible ↑ risk of nephrotoxicity when amphotericin given with vancomycin.

**Cardiac Glycosides:** hypokalemia caused by amphotericin ↑ cardiac toxicity with cardiac glycosides.

**Corticosteroids:** ↑ risk of hypokalemia when amphotericin given with corticosteroids - avoid concomitant use unless needed to control reactions.

**Diuretics:** ↑ risk of hypokalemia when given with loop diuretics or thiazides.
**Garamycin®**  
**Gentamicin 40 mg / 4 mL**

**Dose:** as chart IVI over 30 minutes.

Infusion solution concentration 2 mg/mL.

<table>
<thead>
<tr>
<th>PMA (wks)</th>
<th>Postnatal (d)</th>
<th>Dose (mg/kg)</th>
<th>Interval (h)</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤ 29 *</td>
<td>0-7</td>
<td>5</td>
<td>48</td>
</tr>
<tr>
<td></td>
<td>8-28</td>
<td>4</td>
<td>36</td>
</tr>
<tr>
<td></td>
<td>≥ 29</td>
<td>4</td>
<td>24</td>
</tr>
<tr>
<td>30-34</td>
<td>0-7</td>
<td>4.5</td>
<td>36</td>
</tr>
<tr>
<td></td>
<td>≥ 8</td>
<td>4</td>
<td>24</td>
</tr>
<tr>
<td>≥ 35</td>
<td>All</td>
<td>4</td>
<td>24</td>
</tr>
</tbody>
</table>

* or significant asphyxia, PDA or ttt with indomethacin.

**USES**

**Aerobic G-ve Bacilli** (e.g. Pseudomonas, Klebsiella, E.coli). Usually used in combination with a β-lactam antibiotic.

**ADVERSE EFFECTS**

Transient and reversible renal tubular dysfunction (↑ urinary loss of Na, Ca, and Mg).

Vestibular and auditory ototoxicity.

Increased neuromuscular blockade when used with pancuronium and in patients with hypermagnesemia.

**SERUM LEVEL**

Obtain peak concentration 30 minutes after end of infusion and trough level just prior to the next dose, refrigerate blood sample soon

Peak: 5-12 µg/mL  
Trough: 0.5-1 µg/mL
Gastrazole® Omeprazole 20 mg cap.
Losec® Omeprazole 40 mg vial

**PO:** 0.5-1.5 mg/kg/dose Q24h

Solution concentration 2 mg/mL.

Infusion solution concentration 4 mg/mL.

**USES**
Short-term (< 8 weeks) treatment of documented reflux esophagitis or duodenal ulcer refractory to conventional therapy. Onset of action within 1h with duration of action of 72h.

**MONITOR**
Symptomatic improvement within 3 days.
Intra-esophageal pH monitor to assess efficacy (pH > 4.0).
ALT, AST if duration of therapy > 8 wks.

**ADVERSE EFFECTS**
Hypergastrinemia.
Mild ALT, AST elevation.
# Geveskon®
**Na Alginate / Na Bicarbonate**

**Dose:** 1-2 mL after feeding **PO Q8h.**

| جيفيكسكون شراب | ١–٢ سم بالفم بعد الرضاعة |

**Each 5 mL contains** 5 g sodium alginate + 2.5 gm NaHCO₃

### USES
- **NaHCO₃** may, by acting as an antacid, control some of the symptoms of gastro-oesophageal reflux.
- **Alginate** reacts with gastric acid to form a viscous gel or ‘raft’ that then floats to the top of the stomach, acting as a mechanical barrier to oesophageal reflux.

### ADVERSE EFFECTS / PRECAUTIONS
- Metabolic alkalosis
- Hypernatremia

# Gaviscon® Infant Sachets
**Powder for oral suspension**

**Each dose of Gaviscon® infant Sachets contains** 225 mg of sodium alginate and 87.5 mg magnesium alginate.

**Prepare immediately before use as directed below:**

**For breast-fed infants:**

- < 4.5 kg, one dose and 2 doses if > 4.5 kg
- Add 5 mL of cooled boiled water to the powder in a glass. Mix to a smoothpaste and add another 10 mL water and mix.
- Give after each feed using a spoon or feeding bottle.

**For bottle-fed infants:**

- < 4.5 kg, one dose to be mixed into not less than 115 mL of each feed in thebottle and shaken well.
- > 4.5 kg, 2 doses to be mized into not less than 225 mL of each feed in thebottle and shaken well.

**Young children:**

- 2 doses, prepared as breast-fed ifsnts. To be taken after each meal.
### Heparin 5000 i.u. / mL

**To maintain patency of peripheral and central vascular catheters:** 0.5-1 units/mL of Fluids to be infused.

**Treatment of Thrombosis:** 75 units/kg bolus, followed by 28 units/kg/h IVI
- Measure aPTT 4h after initiating therapy
- Adjust dose to achieve aPTT of 60-85 seconds (corresponds to an anti-factor Xa level of 0.3-0.7).
- Limit treatment to 10-14 days.

**Compatible with** D₅W, D₁₀W and NS.

### USES

To maintain patency of peripheral and central vascular catheters.

Treatment of thrombosis.

### MONITOR

Platelet count every 2-3 days.

aPTT (achieve aPTT of 60-85 seconds).

Signs of bleeding and thrombosis.

### ADVERSE EFFECTS / PRECAUTIONS

Heparin-induced thrombocytopenia (HIT) 1%.

Osteoporosis (with long-term use)

**Contraindicated in** infants with evidence of intracranial or GI bleeding or thrombocytopenia (<50,000/mm³).
**Hydralazine**

**Slowapresoline® 50 mg tab**

**Apresoline® 20 mg vial**

**IV:** begin with 0.1 - 0.5 mg/kg/dose Q6-8h. Increase gradually as required to a maximum of 2 mg/kg/dose Q6h.

**PO:** 0.25-1 mg/kg/dose Q6-8h, or approximately twice the required IV dose. Administer with food to enhance absorption.

*Infusion solution concentration* 1 mg/mL.

To prepare an oral suspension, crush a 50 mg tablet in 4 mL of 5% mannitol then add 46 mL of sterile water to make a final concentration of 1 mg/mL. Stable for 7 days refrigerated.

*Solution concentration* 1 mg/mL.

**NOTE:** use with BB↑ the anti-hypertensive effect and ↓ the magnitude of the reflex tachycardia. This is expected to reduce hydralazine requirements to < 0.15 mg/kg/dose.

**USES**

Mild to moderate hypertension

Afterload reduction in patients with CHF

**MONITOR**

Heart rate and Blood pressure.

Guaiac stools

Periodic CBC for long term use.

**ADVERSE EFFECTS / PRECAUTIONS**

Diarrhea, emesis.

Temporary agranulocytosis.

Tachycardia, postural hypotension, headache, nausea, and a lupus-like syndrome (10-20% of adults).

GI irritation, bleeding, drug fever, rash, conjunctivitis, and bone marrow suppression (in adults, uncommon).
### Intravenous Immune Globulin
**GAMMARAAS® 5% (Human)**

| **Dose:** 500-750 mg/kg/dose (over 2-6h) |
| **Dose In Neonatal Alloimmune Thrombocytopenia:** 400 mg – 1 g/kg |

| **Regimen** | 0.01 – 0.02 mL/kg/min over 30 minutes then the rest of the amount over 1½ h. |
| **Rate/h in 1st 30 min** | $0.02 \times \text{Wt (Kg)} \times 60$ |

Available as 1g in 20 mL – 2.5 g in 50 mL – 5 g in 100 mL

### USES
Adjuvant treatment of fulminant neonatal sepsis, hemolytic jaundice, neonatal alloimmune thrombocytopenia.

### MONITOR
HR and BP.  
IV sites for phlebitis.

### ADVERSE EFFECTS / PRECAUTIONS
- Hypoglycemia (Rare)  
- Transient tachycardia and hypotension
**Indometacín**

**Liometacén® 50 mg vial**

**Closure of PDA:** as table IVI over at least 30 minutes. Usually 3 doses per course, maximum 2 courses.

Give at 12-24h intervals with close monitor to UOP, if anuria or severe oliguria, delay subsequent dose.

**Prevention of IVH:** 0.1 mg/kg Q24h, 3 doses start at 6-12h of age.

**Stable for** 12d when stored at room temperature or refrigerated.

**Compatible with** sterile water, D<sub>2.5</sub>W, D<sub>5</sub>W and NS.

**Incompatible with** D<sub>7.5</sub>W, D<sub>10</sub>W.

<table>
<thead>
<tr>
<th>Age at 1&lt;sup&gt;st&lt;/sup&gt; dose</th>
<th>1&lt;sup&gt;st&lt;/sup&gt;</th>
<th>2&lt;sup&gt;nd&lt;/sup&gt;</th>
<th>3&lt;sup&gt;rd&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 48 h</td>
<td>0.2 mg/kg</td>
<td>0.1</td>
<td>0.1</td>
</tr>
<tr>
<td>2 – 7 d</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
</tr>
<tr>
<td>&gt; 7 d</td>
<td>0.2</td>
<td>0.25</td>
<td>0.25</td>
</tr>
</tbody>
</table>

**USES**

Closure of PDA.

Prevention of IVH.

**MONITOR**

Urine output, Serum electrolytes, creatinine and BUN.

Blood glucose

Assess murmur and pulse pressure

GI bleeding (guaiacing stools and gastric aspirate)

Platelet count, Prolonged bleeding from puncture sites.
# Indometacin

**Liometacen® 50 mg vial**

## ADVERSE EFFECTS

- If oliguria occurs, observe for hyponatremia and hypokalemia and consider prolonging the dosing interval of renally excreted drugs. Consider withholding feedings.
- Hypoglycemia (avoided by ↑ GIR by 2 mg/kg/min)
- Contraindicated in active bleeding, significant thrombocytopenia or coagulation defects, NEC and significantly impaired renal function.
- Avoid rapid infusion (<5min).
- GI perforation if used concurrently with steroids.

## INTERACTIONS WITH

- **ACE Inhibitors:** ↑ risk of renal impairment, also hypotensive effect antagonized.
- **Antibacterials:** indometacin possibly ↑ plasma concentration of amikacin and gentamicin in neonates; possible ↑ risk of convulsions when given with quinolones.
- **Antiepileptics:** NSAIDs possibly ↑ effects of phenytoin.
- **Beta-blockers and Calcium-channel Blockers:** NSAIDs antagonise hypotensive effect.
- **Cardiac Glycosides:** NSAIDs possibly ↑ plasma concentration, possible exacerbation of heart failure and ↓ of renal function.
- **Corticosteroids:** ↑ risk of GI bleeding and ulceration.
- **Diazoxide:** NSAIDs antagonise hypotensive effect.
- **Diuretics:** risk of nephrotoxicity of NSAIDs ↑ by diuretics, also antagonism of diuretic effect; indometacin antagonises effects of diuretics; ↑ risk of hyperkalemia when given with K⁺-sparing diuretics and aldosterone antagonists.
- **Pentoxifylline:** possible ↑ risk of bleeding.
- NSAIDs antagonize hypotensive effect of **hydralazine.**
## Inderal® or Mayestrotense®

**Propranolol 1 mg / mL**

**Starting IV Dose:** 0.01 mg/kg Q6h over 10 min. Increase as needed to a maximum of 0.15 mg/kg/dose Q6h.

**Starting Oral Dose:** 0.25 mg/kg/dose Q6h. Increase as needed to a maximum of 3.5 mg/kg/dose Q6h.

### USE

- Tachyarrhythmias and hypertension.
- SVT especially if associated with Wolff-Parkinson-White syndrome.
- Palliation of TOF and HOCM.
- Adjuvant treatment of neonatal thyrotoxicosis.

### MONITOR

- Continuous ECG monitor.
- Systemic blood pressure.
- Blood glucose during initiation of treatment and after dosage changes.
- Assess for increased airway resistance.

### ADVERSE EFFECTS / PRECAUTIONS

- Hypotension, bradycardia, bronchospasm and hypoglycemia.
- **Contraindicated in** patients with reactive airway disease or diminished myocardial contractility.
- A **withdrawal syndrome** (nervousness, tachycardia, sweating, hypertension) with sudden cessation of the drug.

### INTERACTIONS

- **Cardiac Glycosides:** ↑ risk of AV block and bradycardia. Hypotensive effect of beta-blockers antagonised by **corticosteroids**.
- **Diazoxide:** enhances hypotensive effect.
- **Diuretics:** enhances hypotensive effect.
- **Thyroid Hormones:** metabolism of propranolol is accelerated.
- **Hydralazine:** enhance hypotensive effect.
**Human Insulin, Short-acting**

**Actrapid® 100 Units / mL**

<table>
<thead>
<tr>
<th>Continuous IVI:</th>
<th>0.01-0.1 unit/kg/h</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intermittent SC dose:</td>
<td>0.1-0.2 unit/kg Q6-12h.</td>
</tr>
</tbody>
</table>

**For hyperkalemia:** begin with a bolus of insulin (0.05 u/kg) with 2 mL/kg of D_{10}W followed by IVI of D_{10}W at 2-4 mL/kg/h and regular insulin (0.1 u/mL) at 1 mL/kg/h. The two solutions may be prepared individually to allow adjustments in infusion rate in response to hyper- or hypoglycemia. 

**For IVI:** Mix 15 units in 150 mL NS or D_{5}W (final concentration of 0.1 u/mL; maximum concentration is 1 u/mL). Flush tubing with 25 mL of insulin solution before beginning the infusion.

**Gomella 2009:** to ↓ absorption of insulin to IV solution bag or tubing, flush the line with solution, wait 30 min then flush the line again with solution prior to initiation. The actual amount of insulin being administrated could be less than the apparent amount. So, adjustment of the insulin rate should be based on the effect and not solely on the apparent insulin dose.

**For SC administration:** Dilute to 0.5 - 1 U/mL DW or NS.
**Human Insulin, Short-acting**

**Actrapid® 100 Units / mL**

**USES**

**Hyperglycemic infants with persistent glucose intolerance:**
- Glucose > 250 mg/dL despite ↓ GIR by 2 mg/kg/min Q4-6h.
- Prolonged restriction of IV glucose with ↓ required calories.

Routine use in VLBW to promote growth in not warranted.
Adjuvant therapy for hyperkalemia.

**MONITOR**

Blood glucose concentration Q15-30 minutes after starting infusion and after changes in infusion rate.

**ADVERSE EFFECTS / PRECAUTIONS**

- Hypoglycemia.
- Insulin resistance.
- Euglycemic hyperinsulinemia may cause metabolic acidosis.
- ↓ Glucose level gradually to avoid rapid fluid shifts.
# Kayexalate®

**Sodium Polystyrene Sulfonate**

**DOSE:** 1 g/kg/dose **PO Q6h** via NGT or **PR Q2-6h**

<table>
<thead>
<tr>
<th>Arabic</th>
<th>English</th>
</tr>
</thead>
<tbody>
<tr>
<td>كايكضاوت حقىة شرجية كل ٦ ساعات</td>
<td><strong>For PO use:</strong> Dilute in 3-4 mL fluid per g of resin; 10% sorbitol, water, or syrup may be used as diluent.</td>
</tr>
<tr>
<td><strong>For PR use:</strong> Dilute in water or 25% sorbitol at a concentration of 0.3-0.5 g/mL; retain enema for at least 30-60 min or several hours if possible</td>
<td><strong>The Na⁺ content is ~100 mg/g (4.1 mEq/g) of the drug</strong></td>
</tr>
<tr>
<td>Also available as <strong>Sorbisterit</strong>® (calcium polystyrene sulfonate)</td>
<td></td>
</tr>
</tbody>
</table>

**USES**

- Treatment of hyperkalemia

**ADVERSE EFFECTS**

- Hypokalemia
- Sodium retension
- Hypocalcemia and hypomagnesemia
- Fecal impaction
**Klacid®**
*Clarithromycin 250 mg / 5 mL*

**Dose:** 7.5 mg/kg/dose **PO** Q12h

| كلاصيد شراب (٢٥٠ مجم / ٥ ضم) ـ ١٢ ساعه |

**Solution concentration** 50 mg/mL.

**USES**

Clarithromycin acts like erythromycin and has a similar spectrum of antibacterial activity i.e. mainly against G+ve organisms, although it is usefully more active against *Haemophilus influenzae*.

It’s used for respiratory tract infections including atypical pneumonias and soft tissue infections.

**ADVERSE EFFECTS**

Macrolides are enzyme inhibitors and interfere with the metabolic inactivation of some drugs, e.g. theophylline, increasing their effects.
Konakion®
Vitamin K₁ 10 mg / ml

**Prophylaxis at birth:** 0.5 - 1 mg IM (0.05-0.1mL)

**PT <32 wk (>1kg):** 0.5 mg IM (0.05 mL)

**PT <32 wk (<1kg):** 0.3 mg IM (0.03 mL)

**Severe hemorrhagic disease:** 1-10 mg IV slow push

**USES**
Prophylaxis and therapy of hemorrhagic disease of newborn.

Hypoprothrombinemia

Infants receiving TPN and infants receiving antibiotics for > 2 weeks should be given at least 0.5 mg of vitamin K₁ (IM or IV) weekly to prevent vitamin K depletion.

**MONITOR**
PT (when treating clotting abnormalities) after 2-4 h.

**ADVERSE EFFECTS**
Pain and swelling at IM site.

Efficacy is decreased in liver disease.

Vitamin K₁ may require **3h or more** to stop active bleeding so FFP (10 mL/kg) may be necessary when bleeding is severe.

The drug has no antagonistic effects against heparin.
**L-Carnitine®**

(300 mg / ml Oral Liquid) or (1 g / 5 ml IV)

**IV (included in TPN):**
Starting dose of 10 mg/kg/day

**PO:** 25 mg/kg/dose Q6h.

**Primary deficiency and organic acidemias:**

**PO:** 50 mg/kg Q12h, higher doses up to 200 mg/kg daily occasionally required.

**IVI:** initially 100 mg/kg over 30 minutes followed by a continuous infusion of 4 mg/kg/h.

**Slow IV injection over 2–3 minutes:** 100 mg/kg/daily in 2–4 divided doses

**USES**

L-Carnitine is used in the management of a range of rare genetic conditions associated with carnitine deficiency.

It is essential for the entry of long-chain fatty acids into the mitochondria, where they are oxidized.

**ADVERSE EFFECTS**

Nausea, vomiting, abdominal pain and diarrhea.

Fishy body odour

Side-effects may be dose-related - monitor tolerance during first week and after any dose increase.
**Lanoxin®**

**Digoxin 500 μg / 2 mL**

**LD:** Generally used when treating arrhythmias and acute CHF. Give over 24h as 3 divided doses IV slow push over 5-10 min.

**Oral Doses:** should be 25% greater than IV doses. Don’t administer **IM**.

<table>
<thead>
<tr>
<th>Total Loading Dose</th>
<th>Maintenance Doses</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PMA wks</strong></td>
<td><strong>IV μg/kg</strong></td>
</tr>
<tr>
<td>≤ 29</td>
<td>15</td>
</tr>
<tr>
<td>30-36</td>
<td>20</td>
</tr>
<tr>
<td>37-48</td>
<td>30</td>
</tr>
<tr>
<td>≥ 49</td>
<td>40</td>
</tr>
</tbody>
</table>

Divide into 3 doses over 24h

**USES**

Heart failure caused by diminished myocardial contractility. SVT, atrial flutter and AF.

**MONITOR**

HR, Rhythm and Periodic ECG (assess desired effects and signs of toxicity).

Serum K⁺, Ca, Mg (esp. with diuretics or amphotericin B); ↓K⁺, ↑Ca, ↑Mg predispose to toxicity.

Renal function and Therapeutic serum level (1-2 ng/mL).

Be aware of drug interactions.
ADVERSE EFFECTS / PRECAUTIONS

**Toxic Cardiac Effects:**
- PR interval prolongation.
- Atrial or nodal ectopic beats.
- Sinus bradycardia or SA block.
- Ventricular arrhythmia.

**Non Toxic Cardiac Effects:**
- QTc interval shortening.
- T-wave amplitude dampening.
- ST segment sagging.
- HR slowing.

**Feeding intolerance, vomiting, diarrhea and Lethargy.**

INTERACTIONS

**ACE Inhibitors:** plasma concentration possibly ↑ by captopril.

**Analgesics:** plasma concentration possibly ↑ by NSAIDs, also possible exacerbation of heart failure and reduction of renal function.

**Antibacterials:** plasma concentration possibly ↑ by gentamicin and trimethoprim; plasma concentration possibly ↓ by rifampicin; plasma concentration ↑ by macrolides (↑ risk of toxicity).

**Antiepileptics:** plasma concentration possibly ↓ by phenytoin.

**Amphotericin:** cardiac toxicity if hypokalemia occurs.

**Corticosteroids:** risk of hypokalemia.

**Diuretics:** cardiac toxicity if hypokalemia occurs with acetazolamide, loop diuretics or thiazides and related diuretics; plasma concentration ↑ by spironolactone.
**Lasix®**

**Furosemide 40 mg / 4 mL**

**Initial dose:** 1 mg/kg IV slow push, IM or PO.

**Maximum of** 2 mg /kg/dose IV or 6 mg/kg/dose PO.

**Initial intervals:** PT Q24h – FT Q12h – FT > 1m Q6-8h

Consider alternate-day therapy for long term use.

Compatible with NS and sterile water for injection. Acidic solutions (pH < 5.5) as D5W, D10W cause Lasix® to degrade when they are mixed for several hours.

**Brands include:** Salurin® 5mg /5mL Syrup (not available in Egypt)

**USES**

Diuretic that may also improve pulmonary function.

**HEPATIC IMPAIRMENT**

↓ K⁺ may precipitate coma (K⁺-sparing diuretics prevent this).

**RENAL IMPAIRMENT**

May need high doses.

Deafness and tinnitus may follow rapid IV injection.

**MONITOR**

Urine output.

Serum electrolytes and phosphorus.

Assess for K⁺ depletion in patients receiving digoxin concurrently.

Follow weight changes.

**ADVERSE EFFECTS**

↓Na⁺, ↓K⁺ and hypochloremic alkalosis.

Hypercalciuria and renal calculi (long term use).

Ototoxic (especially with aminoglycosides).

Cholelithiasis (in patients with BPD or CHD who received long-term TPN and lasix).
# Lipovenös®
Fat Emulsion 20%

**Starting Dose:** 0.5 g/kg/day IV  **Increased By:** 0.5 g/kg/day  **Maximum** 3g/kg/day  
**Infusion rate:** should not > 0.15 g/kg/hr – **24h infusion time is preferred.**

LEBOFINOS (20%) (1 جم / 5 سم) ... سم (يرافق الـ TPN)

## USES
Part of TPN  
(Source of calories “2 kcal/mL” and essential fatty acids).

## MONITOR
- Serum triglycerides (<200 mg/dL)
- Liver function test
- Platelet count, Glucose, Bilirubin, Albumin

## ADVERSE EFFECTS
- Hypertriglyceridemia and hyperglycemia.
- Extravasation may cause tissue inflammation and necrosis.
- Use *minimum dose* in severe hyperbilirubinemia, sepsis or severe pulmonary dysfunction.
Magnesium Sulfate
MgSO₄ 10%

**Hypomagnesemia or Refractory hypocalcemia:**

**LD:** 0.25 mL (0.2 mEq)/kg/dose **IV** or **IM** q6h until the serum magnesium level is normal or symptoms resolve, or 0.8-1.6 mEq/kg/dose **PO** 4 times daily.

**MD:** 0.25-0.5 mEq/kg/24 h **IV** (add to infusion or give IV).

**In PPHN:**

**LD:** 200 mg = 2 mL = 1.6 mEq/kg IVI over 20-30 min

**MD:** 20-75 mg = 0.2-0.75 mL = 0.16-0.6 mEq/kg/h IVI to maintain plasma-Mg concentration between 8.5-13.4 mg/dL (3.5-5.5 mmol/L), given for up to 5 days.

**USE**

Hypomagnesemia and Refractory hypocalcemia

PPHN ?!

**MONITOR**

Monitor serum magnesium, calcium, and phosphate levels.

Infuse IV magnesium sulfate over several hours.

**ADVERSE EFFECTS / PRECAUTIONS**

Hypotension
Flushing
Depression of reflexes
Depressed cardiac function,
CNS and respiratory depression.

**Contraindicated in** renal failure.
**Maxical-D®**

**Calcium Carbonate 150 mg / 5 mL**

**Dose:** 20-80 mg elemental Ca/kg/day **PO** in divided doses.

ماكسيكال شراب (150 مجم / 5 سم) ⚫ سم بالفم / 12 ساعة

**Each 5 mL contains:** 150 mg elemental calcium, 173.25 mg magnesium and 100 IU Vit D₃.

**Each 2.5 mg Ca Carbonate contains:** 1 mg elemental Ca.

**Each 5 ml of Hi-Cal® contains:** 1.2 gm calcium glubionate equivalent to 87 mg elemental calcium.

**USE**

Non-acute hypocalcemia in babies able to tolerate oral medications (absorption in small intestine).

**MONITOR**

Periodic serum Ca⁺⁺ level.

Assess GI tolerance.

Assess serum phosphorous and vitamin D levels when indicated.

**ADVERSE EFFECTS / PRECAUTIONS**

Gastric irritation and diarrhea (hypertonic).

Use with caution in infants who are at risk for NEC.

Interferes with absorption of levothyroxine.
# Maxipime®
## Cefepime 1 g Vials

**Dose:** as table, IVI over 30 minutes, or IM

<table>
<thead>
<tr>
<th>Infusion solution concentration</th>
<th>40 mg/mL.</th>
</tr>
</thead>
<tbody>
<tr>
<td>IM solution concentration</td>
<td>250 mg/mL.</td>
</tr>
</tbody>
</table>

### DOSE

<table>
<thead>
<tr>
<th>FD, PT ≥ 28 days</th>
<th>50 mg/kg Q12h</th>
</tr>
</thead>
<tbody>
<tr>
<td>FD, PT ≤ 28 days</td>
<td>30 mg/kg Q12h</td>
</tr>
</tbody>
</table>

**Meningitis and severe infections with pseudomonas or enterobacter**

50 mg/kg Q12h

### USES

**G-ve organisms** (e.g. E.coli, H.influenza, Enterobacter, Klebsiella, Morganella, Neisseria, Serratia and Proteus species), esp. Pseudomonas aeruginosa that is resistant to 3rd generation cephalosporins.

**G+ve organisms** (e.g. Strep pneumonia, Strep pyogenes, Strep agalactiae and Staph aureus).

### ADVERSE EFFECTS (UNCOMMON)

- Rash, Eosinophilia
- Diarrhea, ↑ Hepatic ALT, AST.
- Positive Coombs’ test.
**Meronem®**
**Meropenem 500 mg / 100 mL NS**

**Dose In Sepsis:** 20 mg/kg/dose IVI over 30 min Q12h

**Dose In Meningitis And Pseudomonas Infection:** 40 mg/kg/dose IVI over 30 min Q8h

| Infusion solution concentration | 5 mg/mL. |

**RENSAL IMPAIRMENT**

<table>
<thead>
<tr>
<th>Cr Cl 26-50 mL/min/1.73m²</th>
<th>use normal dose Q12h</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cr Cl 10-25 mL/min/1.73m²</td>
<td>use half normal dose Q12h</td>
</tr>
<tr>
<td>Cr Cl &lt;10 mL/min/1.73m²</td>
<td>use half normal dose Q24h</td>
</tr>
</tbody>
</table>

**USES**
Pneumococcal meningitis and other G-ve organisms resistant to other antibiotics, especially extended spectrum β–lactamase producing Klebsiella pneumoniae.

**MONITOR**
Periodic CBC for eosinophilia, thrombocytosis.
Assess IV sites for signs of inflammation.
AST, ALT.

**ADVERSE EFFECTS / PRECAUTIONS**
Diarrhea (4%), nausea and vomiting (1%).
Rash (2%).
Inflammation at injection site.
†Risk of pseudomembranous colitis and fungal infections.
### Minophylline®
**Aminophylline 250 mg / 10 mL**

**LD:** 8 mg/kg IVI over 30 min or PO.

**MD (8-12h Later):** 1.5-3 mg/kg/dose PO or IV slow push Q8-12h.

**If>55 wks PMA:**↑dose to 25-30 mg/kg/day in divided doses Q4-8h

<table>
<thead>
<tr>
<th>Infusion solution concentration</th>
<th>5 mg/mL</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Infusion solution concentration</th>
<th>10 mg/mL</th>
</tr>
</thead>
</table>

If changing from IV to PO aminophylline, increase dose 20%

If changing from IV aminophylline to PO theophylline, no adjustment.

**USES**
- Neonatal Apnea, including post-extubation and post-anesthesia and prostaglandin E<sub>1</sub>-induced.
- Bronchodilator, may improve respiratory function.

**MONITOR**
- Heart rate (withhold next dose if > 180 bpm)
- Periodic blood glucose
- Agitation
- Feeding intolerance
- Therapeutic level in apnea of prematurity 7-12 μg/mL and in bronchospasm 10-20 μg/mL.

**ADVERSE EFFECTS**
- GI irritation
- Hyperglycemia
- CNS irritability and sleeplessness
- Renal calcifications when used with furosemide and/or dexamethasone.

**TOXICITY**
**Signs:** sinus tachycardia, failure to gain weight, vomiting, jitteriness, hyperreflexia and seizures.

**Treatment:** activated charcoal 1 g/kg by gavage tube Q 2-4h. Avoid sorbitol-containing preparations; may cause osmotic diarrhea.
Morphine Sulphate (10 mg /mL)

**Dose:** 0.05-0.2mg/kg/dose IV over at least 5 minutes, repeat as required, usually Q4h.

**IVI:** 100-150 µg/kg over 1h followed by 10-20 µg/kg/h.

**Opioid dependence:** begin at most recent IV morphine dose equivalent. Taper to 10-20% per day as tolerated. PO dose is ~ 3-5 times IV dose.

**Initial treatment of neonatal narcotic abstinence:** 0.03-0.1 mg/kg/dose PO Q3-4h. Wean dose by 10-20% every 2-3 day based on abstinence scoring (the Finnegan score should be <9). Use the 0.4 mg/mL oral morphine solution

A 0.4 mg/mL oral morphine solution may be made by adding 0.4 mL of concentrated injectable solution to 9.6 mL of NS.

**USES**
Analgesia, sedation.
Treatment of opioid withdrawal and abstinence

**MONITOR**
Respiratory and cardiovascular status.
Abdominal distension, loss of bowel sounds
Consider urine retention if UOP is decreased

**ADVERSE EFFECTS**
**Naloxone** should be readily available to reverse adverse effects
Respiratory depression (↓ responsiveness of the RC to CO₂ tension)
Hypotension and bradycardia
Transient hypertonia
Ileus and delayed gastric emptying
Urine retention
Tolerance – wean slowly
Seizures ?!

**Infusion solution concentration** 0.5 mg / mL.

**Stable for 7 days refrigerated and protected from light.**
| **Motinorm**<sup>®</sup>  
<table>
<thead>
<tr>
<th>Domperidone 5 mg / 5 mL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dose:</strong> 0.1-0.3mg/kg/dose Q4-6h PO 15 min before feeds</td>
</tr>
<tr>
<td>BNFC2009</td>
</tr>
<tr>
<td>موتئنورم شراب (٥مجم / ٥ضم) ... سم بالفم قبل الرضاعة بربع ساعة / ٦ساعات</td>
</tr>
</tbody>
</table>

### USES

Management of severe gastro-esophageal reflux.
Mucosolvan® Solution for oral or inhalation use
Ambroxol hydrochloride 15 mg / 2 mL

**Dose:** 1.2-1.6 mg/kg/day (4-5 drops/kg/day) PO or inhalation.

<table>
<thead>
<tr>
<th>Mيوكووسولفان (٥٠ مجم/٢ ضم)</th>
<th>١٢ نقطة بالفم</th>
<th>١٢ ساعة</th>
</tr>
</thead>
<tbody>
<tr>
<td>ميوكووسولفان (١٥ مجم/٢ ضم)</td>
<td>٢ نقطة من نبيولايزر</td>
<td>١٢ ساعة</td>
</tr>
</tbody>
</table>

1 mL = 25 drops

**USES**
Mucokinetic and secretolytic.
**Mycostatin®**
Nystatin 100,000 U / mL

**PO:** 1 mL (PT) to 2 mL (FT) divided and applied with swab to each side of mouth Q6h. Continue for 3 days after symptoms have subsided.

**Topical:** Apply Q6h. Continue for 3 days after symptoms have subsided.

<table>
<thead>
<tr>
<th>ميكوستاتين قطارة (٠٠٠٠٠٠١ وحدة / سم)</th>
<th> ١-٢ سم مسحة بالفم / ٦ ساعات</th>
</tr>
</thead>
<tbody>
<tr>
<td>ميكوستاتين ببي كريم (٠٠٠٠٠٠١ وحدة / جم)</td>
<td> ٤ دهان مكان الحفاظ / ٦ ساعات</td>
</tr>
</tbody>
</table>

**USES**
Mucocutaneous candida.

**MONITOR**
Response to drug.

**ADVERSE EFFECTS / PRECAUTIONS**
Skin rash caused by vehicle in cream.
<table>
<thead>
<tr>
<th><strong>Narcan®</strong></th>
<th><strong>Naloxone 0.4 mg / mL</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dose:</strong> 0.1 mg/kg IV push or IM, if adequate perfusion.</td>
<td></td>
</tr>
<tr>
<td>ناركان (٤٠٠ مجم / ١ سم)  ٢٥ شرطة بسرنجة انسولين ١٠٠ وريد أوعضل</td>
<td></td>
</tr>
<tr>
<td>Doses needed to reverse narcotic induced depression may be as low as 0.01 mg/kg.</td>
<td></td>
</tr>
<tr>
<td>Tracheal administration is <em>not</em> recommended.</td>
<td></td>
</tr>
<tr>
<td><strong>USES</strong></td>
<td></td>
</tr>
<tr>
<td>Narcotic antagonist (onset within minutes after IV dose and within 1h, if given IM).</td>
<td></td>
</tr>
<tr>
<td>Adjuvant therapy for customary resuscitation efforts for narcotic-induced respiratory (CNS) depression.</td>
<td></td>
</tr>
<tr>
<td><strong>MONITOR</strong></td>
<td></td>
</tr>
<tr>
<td>Respiratory effort</td>
<td></td>
</tr>
<tr>
<td>Neurologic status</td>
<td></td>
</tr>
<tr>
<td><strong>ADVERSE EFFECTS</strong></td>
<td></td>
</tr>
<tr>
<td>No short-term toxicity reported.</td>
<td></td>
</tr>
</tbody>
</table>
**Nebcin®**
Tobramycin 80 mg / 2 mL

**Dose:** as table. IVI over 30 min.

نشرين (80 مجم / 2 سم) (1 سم + 9 سم م) ≤ سم يكمل حتى 10 سم م
وريد على مدى ساعة / ساعة

**Infusion solution concentration** 4 mg/mL.

توبرين (توبريكس) 3... قطرة للعين كل 4 ساعات
توبرين (توبريكس) 3... مرهم للعين كل 8 ساعات

**Tobrin® or Tobrex® 0.3% Ophthalmic use:** instill 1-2 drops into each eye Q4h or more often if severe infection, or apply a small amount of ointment into each eye 2-3 times/day or for severe infections Q3-4h.

<table>
<thead>
<tr>
<th>PMA (wks)</th>
<th>Postnatal(d)</th>
<th>Dose (mg/kg)</th>
<th>Interval (h)</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤ 29 *</td>
<td>0-7</td>
<td>5</td>
<td>48</td>
</tr>
<tr>
<td></td>
<td>8-28</td>
<td>4</td>
<td>36</td>
</tr>
<tr>
<td></td>
<td>≥ 29</td>
<td>4</td>
<td>24</td>
</tr>
<tr>
<td>30-34</td>
<td>0-7</td>
<td>4.5</td>
<td>36</td>
</tr>
<tr>
<td></td>
<td>≥ 8</td>
<td>4</td>
<td>24</td>
</tr>
<tr>
<td>≥ 35</td>
<td>All</td>
<td>4</td>
<td>24</td>
</tr>
</tbody>
</table>

* or significant asphyxia, PDA or ttt with indomethacin.

**USES**

Aerobic G-ve Bacilli (e.g. Pseudomonas, Klebsiella, E.coli). Usually combined with a β-lactam antibiotic (in separate infusion).

**ADVERSE EFFECTS**

Transient and reversible renal tubular dysfunction (↑ urinary loss of Na, Ca, and Mg).

Vestibular and auditory ototoxicity.

Increased neuromuscular blockade when used with pancuronium and in patients with hypermagnesemia.
## Neomaint Solution

### Contents per 1000 mL

<table>
<thead>
<tr>
<th>Component</th>
<th>Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glucose</td>
<td>120 gm/L</td>
</tr>
<tr>
<td>NaCl</td>
<td>1.7535 gm/L</td>
</tr>
<tr>
<td>KCl</td>
<td>0.7445 gm/L</td>
</tr>
<tr>
<td>K</td>
<td>10 mEq/L</td>
</tr>
<tr>
<td>Na</td>
<td>30 mEq/L</td>
</tr>
<tr>
<td>Cl</td>
<td>40 mEq/L</td>
</tr>
<tr>
<td>Osmolarity</td>
<td>746.7 mOsm/L</td>
</tr>
</tbody>
</table>
**Neupogen® (Filgrastim 300 µg/mL)**  
Granulocyte Colony-Stimulating Factor (G-CSF)

**Dose:** 10 µg/kg/dose SC once a day.

**BNFC 2009:** for SC or IV injection or infusion, dilute with D5W to a concentration not less than 15 µg/mL (concentration of 100 µg/mL are adequate for SC use in neonates); to dilute to 2-15 µg/mL, add albumin solution to produce a final albumin solution of 2 mg/mL; **not compatible with NaCl solutions.**

**USES**  
Filgrastim enhances the production and release of WBC from bone marrow. Whether this cytokine can be effective, either prophylactically or therapeutically, in combating neonatal bacterial and fungal infection remains to be established.

**Monitor**  
CBC and Neutrophil Count.  
Discontinue if WBCs count exceeds 50 x 10⁹/L.

**ADVERSE EFFECTS (UNCOMMON)**  
Fever  
Vomiting
## Noradrenaline

2 mg / 1 mL (equivalent to 1 mg base/mL)

**Dose:** 20-100 nanograms(base)/kg/min IVI adjusted according to response; max. 1 μg(base)/kg/min.

<table>
<thead>
<tr>
<th>نورادرينالين (1 مجم / 1 سم) (... سم + 0.5 سم ج 5%)</th>
<th>وريد على مدى 24 ساعة بمعدل ... سم / الساعة</th>
</tr>
</thead>
</table>

**Infusion solution concentration** 40 mg/mL.

Dilute 600 µg (base)/kg to a final volume of 50 mL with infusion fluid (D₅W or NS); an IVI rate of 0.1 mL/hr provides a dose of 20 nanograms(base)/kg/min. Infuse through CVC; discard if discoloured.

**Incompatible with** bicarbonate or alkaline solutions.

1 mg of noradrenaline acid tartrate is equivalent to 500 micrograms of the base. Dose expressed as the base.

**USES**

Acute hypotension (septic shock) or shock secondary to excessive vasodilation.

**Monitor**

Vital signs

Blood pressure

**ADVERSE EFFECTS**

Hypertension.

Bradycardia and arrhythmias.

Peripheral ischemia
**NuTriVene-D® Cap.**

**Daily Supplement**

**Dose:** as table. Divide dosage and administer **PO** 2-3 times per day.

<table>
<thead>
<tr>
<th>Weight</th>
<th>Dose</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 20 lbs</td>
<td>&lt; 9 kg</td>
</tr>
<tr>
<td>21 – 40 lbs</td>
<td>10 – 18 kg</td>
</tr>
<tr>
<td>41 – 60 lbs</td>
<td>19 – 27 kg</td>
</tr>
<tr>
<td>&gt; 80 lbs</td>
<td>&gt; 37 kg</td>
</tr>
</tbody>
</table>

**USES**

Trisomy 21.

**INGREDIENTS (Per 12 Cap.)**

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total fat</td>
<td>&lt; 1 g</td>
</tr>
<tr>
<td>Vit. A (Palmitate)</td>
<td>5000 iu</td>
</tr>
<tr>
<td>Vit. E (Succinate)</td>
<td>400 iu</td>
</tr>
<tr>
<td>Folic acid</td>
<td>400 µg</td>
</tr>
<tr>
<td>Niacinamide</td>
<td>125 mg</td>
</tr>
<tr>
<td>Vit. B₁</td>
<td>45 mg</td>
</tr>
<tr>
<td>Vit. B₂(Riboflavin)</td>
<td>45 mg</td>
</tr>
<tr>
<td>Vit. C (Na Ascorbate)</td>
<td>1000 mg</td>
</tr>
<tr>
<td>Chromium (Cl)</td>
<td>75 µg</td>
</tr>
<tr>
<td>Mg (Oxide)</td>
<td>150 mg</td>
</tr>
<tr>
<td>Molybdenum</td>
<td>75 µg</td>
</tr>
<tr>
<td>Selenium</td>
<td>90 µg</td>
</tr>
<tr>
<td>Acetyl-L-Carnitine</td>
<td>45 mg</td>
</tr>
<tr>
<td>L-Citrulline</td>
<td>70 mg</td>
</tr>
<tr>
<td>L-Histidine</td>
<td>25 mg</td>
</tr>
<tr>
<td>L-Methionine</td>
<td>150 mg</td>
</tr>
<tr>
<td>L-Proline</td>
<td>100 mg</td>
</tr>
<tr>
<td>L-Tryptophan</td>
<td>50 mg</td>
</tr>
<tr>
<td>Betaine</td>
<td>500 µg</td>
</tr>
<tr>
<td>Blue berry Powder</td>
<td>150 mg</td>
</tr>
<tr>
<td>Coenzyme</td>
<td>30 mg</td>
</tr>
<tr>
<td>Lutein</td>
<td>6 mg</td>
</tr>
<tr>
<td>Meso. Insositol</td>
<td>75 mg</td>
</tr>
<tr>
<td>Papain</td>
<td>5 mg</td>
</tr>
<tr>
<td>Taurine</td>
<td>200 mg</td>
</tr>
<tr>
<td>Vit. A (Mixed Carotinoids)</td>
<td>3000 iu</td>
</tr>
<tr>
<td>Vit. D₃ (Cholecalciferol)</td>
<td>300 iu</td>
</tr>
<tr>
<td>Biotin</td>
<td>200 µg</td>
</tr>
<tr>
<td>Folinic acid (Folate)</td>
<td>400 µg</td>
</tr>
<tr>
<td>Pantothenic acid</td>
<td>45 mg</td>
</tr>
<tr>
<td>Vit. B₁₂ (Cyanocobalamin)</td>
<td>90 µg</td>
</tr>
<tr>
<td>Vit. B₆ (Pyridoxine)</td>
<td>35 mg</td>
</tr>
<tr>
<td>Calcium (Citrate)</td>
<td>100 mg</td>
</tr>
<tr>
<td>Iodine (K Iodide)</td>
<td>7 µg</td>
</tr>
<tr>
<td>Mn (Gluconate)</td>
<td>1.5 mg</td>
</tr>
<tr>
<td>K (KCl)</td>
<td>15 mg</td>
</tr>
<tr>
<td>Zinc</td>
<td>30 mg</td>
</tr>
<tr>
<td>Choline Bitartrate</td>
<td>800 mg</td>
</tr>
<tr>
<td>L-Glutathione (reduced)</td>
<td>150 mg</td>
</tr>
<tr>
<td>Alpha-Ketoglutaric acid</td>
<td>500 mg</td>
</tr>
<tr>
<td>L-ornithine</td>
<td>100 mg</td>
</tr>
<tr>
<td>L-Serine</td>
<td>150 mg</td>
</tr>
<tr>
<td>L-Tyrosine</td>
<td>100 mg</td>
</tr>
<tr>
<td>Bioflavonoids</td>
<td>150 mg</td>
</tr>
<tr>
<td>Bromelain</td>
<td>5 mg</td>
</tr>
<tr>
<td>Curcumin</td>
<td>150 mg</td>
</tr>
<tr>
<td>Lycopene</td>
<td>6 mg</td>
</tr>
<tr>
<td>Paba</td>
<td>75 mg</td>
</tr>
<tr>
<td>R-Lipoic acid</td>
<td>25 mg</td>
</tr>
</tbody>
</table>
**NuTriVene-D® Cap.**

**Daily Enzyme Formula**

**Dose:** as table. Administer PO 3 times per day.

<table>
<thead>
<tr>
<th>Weight</th>
<th>Dose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infants to 15 lbs</td>
<td>&lt;6.8 kg</td>
</tr>
<tr>
<td>15 – 25 lbs</td>
<td>6.8 – 11.3 kg</td>
</tr>
<tr>
<td>25 – 35 lbs</td>
<td>11.3 – 15.9 kg</td>
</tr>
<tr>
<td>35 – 50 lbs</td>
<td>15.9 – 22.7 kg</td>
</tr>
<tr>
<td>50 – 70 lbs</td>
<td>22.7 – 31.3 kg</td>
</tr>
<tr>
<td>70 – 100 lbs</td>
<td>31.3 – 45.3 kg</td>
</tr>
<tr>
<td>&gt; 100 lbs</td>
<td>&gt; 45.3 kg</td>
</tr>
</tbody>
</table>

**USES**

Trisomy 21.

**INGREDIENTS (Per 1 Cap.)**

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lipase</td>
<td>25 mg</td>
</tr>
<tr>
<td>Lactase</td>
<td>1 mg</td>
</tr>
<tr>
<td>Cellulose</td>
<td>1 mg</td>
</tr>
<tr>
<td>Alpha-Amylase</td>
<td>25 mg</td>
</tr>
</tbody>
</table>
**Orelox®**

Cefpodoxime 40 mg / 5 mL susp.

**Dose in infants 15 d - 6m:** 4 mg/kg/dose PO Q12h.

**USES**

Upper respiratory tract infections (but in pharyngitis and tonsillitis reserved for infections which are recurrent, chronic, or resistant to other antibacterials).

Lower respiratory tract infections (including bronchitis and pneumonia)

Skin and soft tissue infections.

Uncomplicated urinary tract infections.

**RENAL IMPAIRMENT**

GFR 10-40 mL/min/1.73m² ⇒ ↑ dose interval to Q24h.

GFR <10 mL/min/1.73m² ⇒ ↑ dose interval to Q48h.

**ADVERSE EFFECTS**

**Most Frequent:**

Serum Sickness, Vulvovaginal Candidiasis.

**Less Frequent:**

Abdominal Pain with Cramps, Diarrhea, Nausea, Oral Candidiasis, Vomiting.

**Rare:**

Allergic Reactions, Anaphylaxis, Angioedema, Drug Fever, Erythema, Erythema Multiforme, Hemolytic Anemia, Hypoprothrombinemia, Pruritus of Skin, Pseudomembranous Enterocolitis, Renal Disease, Seizure Disorder, Skin Rash, Stevens-Johnson Syndrome.

**Storage**

Keep suspension in the fridge for up to 10 days after reconstitution.
## Pediamaint Solution

<table>
<thead>
<tr>
<th>Contents per 1000 mL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glucose</td>
</tr>
<tr>
<td>NaCl</td>
</tr>
<tr>
<td>KCl</td>
</tr>
<tr>
<td>Ca Gluconate</td>
</tr>
<tr>
<td>K</td>
</tr>
<tr>
<td>Na</td>
</tr>
</tbody>
</table>
Penicillin G Sodium®
Benzylpenicillin 1,000,000 units Vial

**Menengitis:** 75,000 to 100,000 units/kg/dose **IVI** over 30 min or **IM**

**Bacteremia:** 25,000 to 50,000 units/kg/dose **IVI** over 15 min or **IM**

**Congenital Syphilis:** 50,000 units/kg/dose **IVI** over 15 min Q12h for 1st 7d then Q8h. Treat for 10-14d.

Na content is 2 mEq per 1 million units (600 mg).

Infusion solution concentration 50,000 units/mL.

<table>
<thead>
<tr>
<th>PMA (wk)</th>
<th>Postnatal (d)</th>
<th>Interval (h)</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤ 29</td>
<td>0-28</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>&gt;28</td>
<td>8</td>
</tr>
<tr>
<td>30-36</td>
<td>0-14</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>&gt;14</td>
<td>8</td>
</tr>
<tr>
<td>37-44</td>
<td>0-7</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>&gt;7</td>
<td>8</td>
</tr>
<tr>
<td>≥ 45</td>
<td>All</td>
<td>8</td>
</tr>
</tbody>
</table>

**USES**
Congenital §, gonococci, streptococci (non enterococcal).

**MONITOR**
Observe IV site for signs of extravasation.
Serum Na⁺ and K⁺ when using high doses with RF.

**ADVERSE EFFECTS**
Cardiac arrest (with high doses infused rapidly).
BM depression, granulocytopenia.
Hepatitis.
## Phentolamine

**Rogitine® 10 mg / 1 mL**

1-5 mL of a 1 mg/mL solution is injected SC into affected area (depending on the size of the infiltrate).

**Solution concentration** 1 mg / mL.

**Don’t exceed** 0.1 mg/kg or 2.5 mg total.

### USES

Alpha-blocker agent used for prevention of dermal necrosis and sloughing caused by extravasation of vasoconstrictive agents e.g. dopamine.

### MONITOR

Assess affected area for reversal of ischemia.

Blood pressure.

### ADVERSE EFFECTS / PRECAUTIONS

Hypotension (if very large dose is used).

Consider using **topical 2% nitroglycerin** ointment if affected extremity is significantly swollen.
<table>
<thead>
<tr>
<th>Vitamin</th>
<th>Per 1 mL (20 drops)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>10,000 IU</td>
</tr>
<tr>
<td>D</td>
<td>2,000 IU (100/drop)</td>
</tr>
<tr>
<td>E</td>
<td>2 mg</td>
</tr>
<tr>
<td>C</td>
<td>25 mg</td>
</tr>
<tr>
<td>Thiamine (B₁)</td>
<td>25 mg</td>
</tr>
<tr>
<td>Riboflavin (B₂)</td>
<td>1 mg</td>
</tr>
<tr>
<td>Nicotinamide (B₃)</td>
<td>20 mg</td>
</tr>
<tr>
<td>Pyridoxine (B₆)</td>
<td>3 mg</td>
</tr>
</tbody>
</table>

بول فيت...← نقط بالفم أو بالزرائل / 24 ساعة
# Medical Management of Persistent Cholestasis

<table>
<thead>
<tr>
<th>Clinical Impairment</th>
<th>Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Malabsorption of dietary long-chain triglycerides</td>
<td>Replace with dietary formula or supplements containing medium-chain triglycerides</td>
</tr>
</tbody>
</table>

## Fat-Soluble Vitamin Malabsorption:

<table>
<thead>
<tr>
<th>Vitamin A deficiency (night blindness, thick skin)</th>
<th>10,000–15,000 IU/day as Aquasol A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vitamin E deficiency (neuromuscular degeneration)</td>
<td>Replace with 50–400 IU/day as oral α-tocopherol or TPGS</td>
</tr>
<tr>
<td>Vitamin D deficiency (metabolic bone disease)</td>
<td>5,000–8,000 IU/day of Vit-D₂ or 3–5 μg/kg/day of 25-hydroxycholecalciferol</td>
</tr>
<tr>
<td>Vitamin K deficiency (hypoprothrombinemia)</td>
<td>2.5–5.0 mg every other day as water-soluble derivative of menadione</td>
</tr>
<tr>
<td>Micronutrient deficiency</td>
<td>Calcium, phosphate, or zinc supplementation</td>
</tr>
<tr>
<td>Deficiency of water-soluble vitamins</td>
<td>Twice the RDA</td>
</tr>
</tbody>
</table>

## Retention of Biliary Constituents such as Cholesterol:

| Itch or Xanthomas                                        | Choleretic bile acids and ursodeoxycholic acid, 15–20 mg/kg/day            |

## Progressive Liver Disease; Portal Hypertension:

| Variceal bleeding, Ascites and hypersplenism             | Interim management (control bleeding; salt restriction; spironolactone)    |

## End-Stage Liver Disease:

<table>
<thead>
<tr>
<th>Liver failure</th>
<th>Transplantation</th>
</tr>
</thead>
<tbody>
<tr>
<td>TPGS, D-tocopherol polyethylene glycol 1000 succinate, RDA, recommended daily allowance</td>
<td>Paths to End-Stage Liver Disease:</td>
</tr>
</tbody>
</table>
**Potassium Chloride (KCl 15%)**

**Initial oral replacement therapy:** 0.5-1 mEq/kg/day divided and administrated with feedings.

**Acute treatment of symptomatic hypokalemia:** begin with 0.5-1 mEq/kg IV over 1 hour then reassess.

The injectable form may be given in divided doses **PO** and diluted in the infant’s formula.

| **Maximum Peripheral IV solution concentration** | 0.04 mEq/mL |
| **Maximum Central IV solution concentration** | 0.08 mEq/L |

**Potassium M® 165 mg / 5 mL**

Each 1 mL = 33 mg = 0.44 mEq

1 mEq $K^+$ = 74.6 mg KCl (0.5 mL KCl 15%)

**Monitor**

- Serum $K^+$ and renal function.
- Continuous ECG monitor (if IVI).
- Check IV site for extravasation.
- Assess GI tolerance.

**Adverse effects / Precautions**

- Arrhythmias (peaked T-waves, widened QRS, flattened P waves, bradycardia, heart block and cardiac arrest).
- Thrombophlebitis and pain at site of infusion.
- GI irritation (diarrhea, vomiting, and bleeding) $\rightarrow$ divide dose and administer with feeding.

**Effects of $\downarrow K^+$ include** neuromuscular weakness, paralysis, ileus, urine retention, ECG changes (ST depression, low voltage T-wave, appearance of U wave) and $\uparrow$ digitalis toxicity.
**Prostigmine®**
Neostigmine 12.5 mg / 5 mL

**Myasthenia gravis:** 0.1 mg IM. Given 30 min before feeding. 1 mg PO (Given 2h before feeding). Dose may be increased.

**Reversal of neuromuscular blockade:** 0.04-0.08 mg/kg IV. In addition to atropine 0.02 mg/kg.

| ...غزطت بطزهجت اوطولين ٠٠١ ... | ...سربطة بسرنزة انسولين ١٠٠ وريد | 
| Infusion solution concentration | 0.5 mg/mL (1:2000). |

**USES**
- Neonatal transient or persistent (congenital) myasthenia gravis
- Reversing effects of neuromuscular blocking drugs.

**Monitor**
- Respiratory and Cardiovascular status.

**ADVERSE EFFECTS**
- **Contraindicated with** urinary or intestinal obstruction, bradycardia or hypotension.
- **Use cautiously in patients with** bronchospasm or arrhythmia.
- Muscle weakness, tremors
- Bradycardia, hypotension
- Respiratory depression, bronchospasm
- Diarrhea and excessive salivation.
Prostin-VR®
Prostaglandin E₂ 500 μg / mL

**Initial Dose:** 0.05-0.1 μg/kg/min IVI. Titrate to response.

**MD:** as low as 0.01 μg/kg/min IVI.
May be given via UAC positioned near ductus arteriosus.

**Volume of drug needed per day** = \( \frac{\text{Dose} \times 1.44 \times \text{wt}}{500} \) is added to 24 mL D₅W or NS and given as IVI at a rate of 1 mL/h.

**Minimum Infusion solution concentration** 10 μg/mL.

**Maximum Infusion solution concentration** 20 μg/mL.

Must be refrigerated. Prepare fresh infusion solutions every 24h.

**Compatible with** dopamine, epinephrine, furosemide, heparin, midazolam and KCl.

**USES**
Promote dilatation of ductus arteriosus in infants with CHD dependent on ductal shunting for oxygenation/perfusion.

Maximum effect seen within 30 min in cyanotic lesions, may take several hours in acyanotic lesions.

**Monitor**
Respiratory and Cardiovascular status.

Improvement in oxygenation.

Ensure reliable IV access.

Temperature.

Infusion site for extravasation and tissue necrosis.
**Prostmin-VR®**
Prostaglandin E$_2$ 500 μg / mL

### ADVERSE EFFECTS

**Be prepared to intubate / resuscitate.**

**Common (6-15%):**
- Apnea (consider treatment with aminophylline), seen most often in neonates < 2kg at birth and usually appears during the 1$^{st}$ h of drug infusion.
- Hypotension, cutaneous flushing and bradycardia.
- Fever and leukocytosis.
- Hypokalemia with long term therapy (> 20 days), especially with doses > 0.05 μg/kg/min.
- Gastric outlet obstruction and reversible cortical proliferation of long bones after prolonged ttt (> 120h).

**Uncommon (1-5%):**
- Seizures.
- Hypoventilation.
- Tachycardia.
- Cardiac arrest.
- Edema.
- Sepsis, diarrhea and DIC.

**Rare (<1%):**
- Urticaria and bronchospasm.
- Hemorrhage.
- Hypoglycemia and hypocalcemia.

**Musculoskeletal changes:**
- Widened fontanels
- Pretibial and soft tissue swelling of the extremities may occur after 9 days of therapy.
- Cortical hyperostosis and periostitis may occur with long term use (>3 months).
- These changes resolve over weeks after discontinuation of therapy.
**Protam®**
Protamine sulfate 10 mg / mL

**Dose according to time since last heparin dose given:**
- **<30 min:** 1 mg / 100 units of heparin given.
- **30-60 min:** 0.5-0.75 mg / 100 units of heparin given
- **60-120 min:** 0.375-0.5 mg / 100 units of heparin given
- **>120 min:** 0.25-0.375 mg / 100 units of heparin given

**Maximum dose:** 50 mg

IV Infusion rate should not > 5 mg/min.

**Compatible with** D5W and NS.

**USES**
Heparin antagonist.

**MONITOR**
- Vital signs
- Clotting functions
- Blood pressure
- Bleeding

**ADVERSE EFFECTS / PRECAUTIONS**
Excessive doses can cause serious bleeding problems
Hypotension, bradycardia, dyspnea, and transitory flushing (in adults).
**Pulmicort® Respules**
Budesonide 0.5 mg / mL

| **BPD with assisted ventilation by aerosol inhalation:** | 0.4 mg twice daily. |
| **BPD with spontaneous respiration by inhalation of nebulizer suspension:** | 0.5 mg twice daily. |

**USES**
May prevent or treat ventilator-induced chronic lung disease.

Postnatal steroid treatment should only be considered in babies who are ill and ventilator dependent more than a week after birth.
**Recombivax®**
**Hepatitis B Vaccine (HepB)**

**IM:** 0.5 mL given in anterolateral thigh

<table>
<thead>
<tr>
<th><strong>USES</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Should be given to all children before hospital discharge (can be delayed if the mother is a documented HBsAg –ve)</td>
</tr>
<tr>
<td>If mother is HBsAg +ve → Give HepB and 0.5 mL of HBIG within 12 h of birth</td>
</tr>
<tr>
<td>If mother’s HBsAg status is unknown → Give HepB within 12 h and determine HBsAg status as soon as possible and if +ve → Administer HBIG (no later than 1 week)</td>
</tr>
</tbody>
</table>

**Hepatitis B Immune Globulin (HBIG)**

**IM:** 0.5 mL given in the other thigh

<table>
<thead>
<tr>
<th><strong>PRECAUTION FOR HBIG</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>When given at the same time as the first dose of HepB → Use a separate syringe and a different site</td>
</tr>
<tr>
<td>Draw back on the plunger of the syringe before injection to be certain the needle is not in a blood vessel</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>ADVERSE EFFECTS / PRECAUTIONS</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Local pain and tenderness</td>
</tr>
<tr>
<td>Systemic reactions if given IV</td>
</tr>
<tr>
<td>Use universal precautions with neonates born to HBsAg +ve mothers until they have been bathed carefully</td>
</tr>
</tbody>
</table>
**Rifampicin**

**Rifocin® 250 mg / 3 mL or Rimactane® 2%**

5-10 mg/kg/dose Q12h over 30 min **IVI**

10-20 mg/kg/dose Q24h **PO**

**USES**

Used in combination with vancomycin or aminoglycosides for treatment of persistent staphylococcal infection.

Prophylaxis against *N. meningitides* and *H. influenza type b*.

**MONITOR**

AST, ALT, bilirubin.

CBC for thrombocytopenia.

IV sites for phlebitis.

**ADVERSE EFFECTS / PRECAUTIONS**

Orange/red discoloration of body secretions.

Extravasation may cause local irritation and inflammation.

Potent CP450 enzyme inducer; ↓ Effect of aminophylline, fluconazole, midazolam, morphine, Phenobarbital, phenytoin, propranolol and zidovudine.

**HEPATIC IMPAIRMENT**

Avoid use or don’t exceed 8 mg/kg daily
Ringer’s Lactate

Lactated Ringer’s is a solution that is isotonic with blood and intended for IV administration.

Contents:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Na</td>
<td>130 mEq/L</td>
</tr>
<tr>
<td>K</td>
<td>4 mEq/L</td>
</tr>
<tr>
<td>Ca</td>
<td>2.7 mEq/L</td>
</tr>
<tr>
<td>Bicarbonate (as lactate)</td>
<td>28 mEq/L</td>
</tr>
<tr>
<td>Cl</td>
<td>108.7 mEq/L</td>
</tr>
<tr>
<td>Osmolarity</td>
<td>273mOsm/L</td>
</tr>
</tbody>
</table>
**Rocephin®**

**Ceftriaxone 0.5 - 1 g Vials**

**Dose:** 50 mg/kg Q24h **IVI** over 30 min, or **IM**.

**In Meningitis:** 100 mg/kg LD then 80 mg/kg Q24h.

**In Uncomplicated Gonococcal Ophthalmia:** 50 mg/kg (maximum 125 mg) single dose.

**Infusion solution concentration** 100 mg/mL.

**IM solution concentration** 250 mg/mL.

Also available as **Cefotrix®** 250, 500, 1000 mg vials

**USES**

- Neonatal sepsis and meningitis by G-ve organisms (e.g. E.coli, Pseudomonas, Klebsiella, H.influenza).
- Gonococcal infections.

**MONITOR**

- CBC for eosinophilia, thrombocytosis, leuckopenia.
- Serum electrolytes, BUN, creatinine.
- AST, ALT, bilirubin.
- Consider abdominal US.

**ADVERSE EFFECTS / PRECAUTIONS**

*Not recommended for use with hyperbilirubinemia*; it displaces bilirubin from albumin binding sites.

**Concurrent use of Ca-Containing solutions** in not recommended within 48h of the last administration of ceftriaxone.

- Eosinophilia, thrombocytosis and leuckopenia.
- Rash, ↑ Bleeding time.
- Diarrhea, transient GB precipitations (± colicky abdominal pain, nausea and vomiting), ↑ AST, ALT.
- ↑ BUN and serum creatinine.
# Salbutamol® / Albuterol

## Ventolin® / Farcolin® 5 mg / mL

## Salamol® 5 mg / 2.5 mL

**DOSE:** 0.1-0.5 mg (0.02-0.1 mL)/kg/dose Q2-6h **via nebulizer**.

**PO:** 0.1-0.3 mg/kg/dose Q6-8h.

**For Hyperkalemia:** 0.4 mg (0.08 mL)/kg/dose Q2h **via nebulizer**.

###USES

- Bronchodilator.
- Hyperkalemia

###MONITOR

- Degree of bronchospasm.
- Continuous ECG monitor. Stop if HR > 180 bpm.
- Serum K⁺.

###ADVERSE EFFECTS

- Tachycardia, arrhythmia.
- Tremor
- Hypokalemia (drives K⁺ intracellularly).
- Irritable behavior
<table>
<thead>
<tr>
<th><strong>Simethicone® 2%</strong>&lt;br&gt;Activated Dimethicone drops or emulsion</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dose:</strong> 21 mg with or after each feed (max. 6 doses in 24h); may be added to bottle feed</td>
<td></td>
</tr>
<tr>
<td>سايمثيكون 2% نقاط 1 سم بالفم بعد الرضاعة 6-8 ساعات</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Dentinox® Colic Drops</strong>&lt;br&gt;Simeticone</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dose:</strong> 2.5mL with or after each feed (max. 6 doses in 24 hours); may be added to bottle feed.</td>
<td></td>
</tr>
</tbody>
</table>

| **USES** |  |
| Colic or wind pain |  |
**Solu-cortif® or Flebocortid®**
Hydrocortisone 100 mg / 2 mL

**Physiologic replacement:** 7-9 mg/m\(^2\)/day IV or PO in 2-3 doses

**Stress Dose (pressor and volume resistant hypotension):** 20-30 mg/m\(^2\)/day IV in 2-3 doses or ~ 1 mg/kg/dose Q8h.

**Chorioamnionitis-exposed ELBW infants:** 0.5 mg/kg/dose IV Q12h for 9 days, then 0.25 mg/kg Q12 h for 3 days.

**Infusion solution concentration** 10mg/mL.

**BSA (m\(^2\)) = (0.05 X Kg) + 0.05**
Available also as **Micort® 10 mg tab.**

**USES**
Cortisol deficiency.
Pressor-resistant hypotension (↑BP within 2h of 1\(^{st}\) dose)
Adjunctive therapy for persistent hypoglycemia
↓ Risk of CLD in ELBW infants exposed to chorioamnionitis.

**MONITOR**
Blood pressure and Blood glucose during acute illness.

**ADVERSE EFFECTS**
Hyperglycemia.
Hypertension, salt and water retention.
↑ Risk of GI perforation when used with indomethacin.
↑ Risk of disseminated Candida infections.
**Sominaletta®**

**Phenobarbital**

**LD:** 20 mg/kg IV slowly over 10-15 min, with refractory seizures add 5 mg/kg doses, up to a total of 40 mg/kg.

**MD:** 3-4 mg/kg/day (12-24 after LD) IV, IM, PO or PR. Given daily (Q12h probably unnecessary).

<table>
<thead>
<tr>
<th>سوميناليتتا (٠٤ مجم / ضم) (١ ضم + ٣ سم ج ٥٪)</th>
<th>٢ سم لكل كجم ثم ٥؟ سم لكل كجم بعد أقصى ٤ جرعة ثم بعد ١٢ ساعة ... شرطة بسرنجة انسلين</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infusion solution concentration 10 mg/mL.</td>
<td></td>
</tr>
</tbody>
</table>

**USES**

Anticonvulsant.

May improve outcome in severely asphyxiated infants, used prior to onset of seizures (40 mg/kg IVI over 1h)

May enhance bile excretion in patients with cholestasis before $^{99}$Tc-IDA scanning.

**MONITOR**

**Therapeutic level** 15-40 μg/mL.

Altered (usually†) serum concentrations if used with phenytoin or valproate.

**HEPATIC IMPAIRMENT**

May precipitate coma.

Avoid in severe impairment.

**RENNAL IMPAIRMENT**

Use with caution.
**ADVERSE EFFECTS**

Sedation at serum level > 40 μg/mL.
Respiratory depression at serum level > 60 μg/mL.
Irritating to veins.

**INTERACTIONS**

**Analgesics**: barbiturates possibly ↑ CNS effects of opioid analgesics.

**Antibacterials**: barbiturates accelerate metabolism of chloramphenicol, doxycycline and metronidazole (↓ plasma concentration); phenobarbital possibly ↓ plasma concentration of rifampicin.

Plasma concentration of phenobarbital often ↑ by phenytoin, plasma concentration of phenytoin often ↓ but may be ↑.

Barbiturates possibly ↓ plasma concentration of propranolol.

**Cardiac Glycosides**: barbiturates accelerate metabolism of digitoxin (reduced effect).

**Corticosteroids**: barbiturates accelerate metabolism of corticosteroids (reduced effect).

**Diuretics**: ↑ risk of osteomalacia when phenobarbital given with carbonic anhydrase inhibitor.

**Theophylline**: barbiturates accelerate metabolism of theophylline (reduced effect).

**Thyroid Hormones**: barbiturates accelerate metabolism of thyroid hormones (may ↑ requirements for thyroid hormones in hypothyroidism).

**Vitamins**: barbiturates possibly ↑ requirements for vitamin D.
**Spironolactone**  
*Aldactone® 25 mg tab.*

**Dose:** 1 - 3 mg/kg Q24h PO.

الداكتون (25 مجم قرص/ 10 سم) - شرطة بسرنجة انسولين 100 بالقلم/24 ساعة

**USES**

- In combination with other diuretics in treatment of CHF and BPD (situations of increased aldosterone secretion).
- Ascites and edema.
- Reduction of hypokalemia induced by diuretics or amphotericin.

**Addition of spironolactone to thiazide diuretic therapy in BPD may yield little, if any, additional benefit.**

**May require several days of therapy before effect is seen.**

**MONITOR**

- Serum $K^+$ in long term therapy (discontinue if ↑).
- Measuring urinary $K^+$ is a useful indicator of effectiveness.

**RENAL IMPAIRMENT**

- Use with caution.
- Monitor $K^+$ concentration; high risk of hyperkalemia in RF
- Avoid if rapidly deteriorating or severe renal impairment.

**ADVERSE EFFECTS**

- Hyperkalemia, hyponatremia.
- False positive ELISA screening for congenital adrenal hyperplasia.
- Rash.
- Vomiting, diarrhea.
- Dose-dependent androgenic effect in females.
- Gynecomastia in males.
- A tumorigen in chronic animal toxicity studies.
### Sulperazon®
**Cefoperazone / Sulbactam 1.5 g / 25 mL**

**Dose:** 30 - 40 mg/kg/dose **IV Q12h**

| سالبيرازون (1.5 جم / 25 سم ماء مقطر) | سم وريد / 12 ساعة |

**Infusion solution concentration** 60 mg/mL.

---

### Cefobid®
**Cefoperazone 1 g/10 mL**

**Dose:** 25 - 50 mg/kg/dose **IM Q12h**

| سيفوبيد (1 جم / 10 سم ماء مقطر) | سم عضل / 12 ساعة |

**Solution concentration** 100 mg/mL.

---

### MONITOR
- Renal function (if used with aminoglycosides).
- CBC.
- Liver enzymes.

### ADVERSE EFFECTS
- Hypersensitivity, skin reactions, fever and a change in Coombs’ test.
- Reversible neutropenia, decreased hemoglobin or hematocrit, transient eosinophilia.
- Diarrhea or loose stools.
- Pseudomembranous colitis.
- Transient elevations of BUN and serum creatinine.
**Survanta®**  
Beractant, Intratracheal Suspension 4 or 8 mL vials

**DOSE:** 4 mL/kg/dose, intratracheally, divided into 4 aliquots, given as soon as possible after birth, preferably within 8 hours of birth; may be repeated within 48h at intervals of at least 6h for up to 4 doses.

<table>
<thead>
<tr>
<th>Each mL of Survanta® contains 25 mg of phospholipids.</th>
</tr>
</thead>
<tbody>
<tr>
<td>It is an off-white to light brown liquid supplied in single-use glass vials containing 4 mL (100 mg phospholipids) or 8 mL (200 mg phospholipids).</td>
</tr>
</tbody>
</table>

**USES**

- Prophylaxis (<29wk gestation).
- Rescue treatment of moderate to severe RDS.
- Respiratory failure in mature infants due to MAS, pneumonia, PPHN.

**MONITOR**

- ETT patency and position
- $O_2$ saturation, ECG, and blood pressure.
- Impaired gas exchange caused by blockage of the airway.
- Frequent assessment of oxygenation / ventilation.

**ADVERSE EFFECTS / PRECAUTIONS**

- If infant becomes dusky or agitated, HR slows, $O_2$ saturation falls > 15% or surfactant backed up in the ETT, dosing should be slowed or halted.
- Pulmonary hemorrhage (2-4%), mostly the smallest infants with untreated PDA.
How To Use Survanta®

Swirl the vial gently (DO NOT SHAKE) to redisperse settling.

Warm the vial by standing at room temperature for at least 20 minutes or warm in the hand for at least 8 minutes. Artificial warming methods shouldn't be used. If a prevention dose is to be given, preparation of Survanta® should begin before the infant's birth.

Unopened vials of Survanta® that have been warmed to room temperature may be returned to the refrigerator within 24h of warming, and stored for future use. Survanta® SHOULD NOT BE REMOVED FROM THE REFRIGERATOR FOR > 24 h. Survanta® SHOULD NOT BE WARMED AND RETURNED TO THE REFRIGERATOR > ONCE.

Used vials with residual drug should be discarded.

Survanta® is administered intratracheally by instillation through a 5-F end-hole catheter. The length of the catheter should be shortened so that the tip of the catheter protrudes just beyond the end of the ET above the infant's carina. Survanta® should not be instilled into a mainstem bronchus.

The catheter can be inserted into the infant's by briefly disconnecting the ET from the ventilator. After administration of each quarter-dose, the catheter is removed and the infant is ventilated for at least 30 seconds until stable.

To ensure homogenous distribution of Survanta® throughout the lungs, each dose is divided into four quarter-doses. Each quarter-dose is administered with the infant in a different position. The recommended positions are:

- Head and body inclined 5-10° down, head turned to the right
- Head and body inclined 5-10° down, head turned to the left
- Head and body inclined 5-10° up, head turned to the right
- Head and body inclined 5-10° up, head turned to the left
<table>
<thead>
<tr>
<th>WEIGHT (gm)</th>
<th>TOTAL DOSE (mL)</th>
<th>WEIGHT (gm)</th>
<th>TOTAL DOSE (mL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>600-650</td>
<td>2.6</td>
<td>1301-1350</td>
<td>5.4</td>
</tr>
<tr>
<td>651-700</td>
<td>2.8</td>
<td>1351-1400</td>
<td>5.6</td>
</tr>
<tr>
<td>701-750</td>
<td>3.0</td>
<td>1401-1450</td>
<td>5.8</td>
</tr>
<tr>
<td>751-800</td>
<td>3.2</td>
<td>1451-1500</td>
<td>6.0</td>
</tr>
<tr>
<td>801-850</td>
<td>3.4</td>
<td>1501-1550</td>
<td>6.2</td>
</tr>
<tr>
<td>851-900</td>
<td>3.6</td>
<td>1551-1600</td>
<td>6.4</td>
</tr>
<tr>
<td>901-950</td>
<td>3.8</td>
<td>1601-1650</td>
<td>6.6</td>
</tr>
<tr>
<td>951-1000</td>
<td>4.0</td>
<td>1651-1700</td>
<td>6.8</td>
</tr>
<tr>
<td>1001-1050</td>
<td>4.2</td>
<td>1701-1750</td>
<td>7.0</td>
</tr>
<tr>
<td>1051-1100</td>
<td>4.4</td>
<td>1751-1800</td>
<td>7.2</td>
</tr>
<tr>
<td>1101-1150</td>
<td>4.6</td>
<td>1801-1850</td>
<td>7.4</td>
</tr>
<tr>
<td>1151-1200</td>
<td>4.8</td>
<td>1851-1900</td>
<td>7.6</td>
</tr>
<tr>
<td>1201-1250</td>
<td>5.0</td>
<td>1901-1950</td>
<td>7.8</td>
</tr>
<tr>
<td>1251-1300</td>
<td>5.2</td>
<td>1951-2000</td>
<td>8.0</td>
</tr>
</tbody>
</table>
**Sutrim® (Co-trimoxazole)**

Trimethoprim+Sulfamethoxazole 40+200mg / 5mL

**Dose:** 24 mg/kg/24h PO in the 1st week of life then Q12h.

**Pneumocystis carinii pneumonia:** 24 mg/kg Q6h PO in babies > 4 wks.

## USES

- To treat cholera.
- To prevent and treat Pneumocystis carinii infection.
- It has been used to treat uncomplicated malaria, and also used in meningitis because of good tissue and CSF penetration.
- Respiratory and urinary tract infections
- Severe systemic infection, possible combined immune deficiency, or overt HIV, to reduce the risk of bacterial infection.

## AVOID IN BABIES WITH

- Severe liver disease.
- Serious unconjugated jaundice.
- Acute porphyria.

## ADVERSE EFFECTS / PRECAUTIONS

- Co-trimoxazole increases the plasma half life of phenytoin.
- Risk of haemolytic anaemia in babies with G6PD deficiency

## RENAL IMPAIRMENT

- GFR 15–30 mL/min/1.73m² ⇒ Use half normal dose.
- If GFR < 15 mL/min/1.73m² or if plasma level of sulfamethoxazole can’t be monitored ⇒ Avoid.
# Targocid®

**Teicoplanin 200 mg / 5 mLNS**

<table>
<thead>
<tr>
<th><strong>Dose:</strong></th>
<th>16 mg/kg LD <strong>IV</strong> followed by 8 mg/kg <strong>IV</strong> or <strong>IM</strong> once Q24h. Treat proven septicemia for at least 7 days.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Infusion solution concentration</strong></td>
<td>40 mg/mL.</td>
</tr>
</tbody>
</table>

## USES

Teicoplanin is active against many **G+ve anerobes** and is particularly potent against Clostridium species. It is also active against most Listeria, enterococci and staphylococci (including **MRSA**) although it may work more as a bacteriostatic drug than as a bactericidal drug.

Vancomycin resistant organisms are sometimes sensitive to teicoplanin.

Rifampicin may be synergistic in the management of staph. infection.

## MONITOR

<table>
<thead>
<tr>
<th><strong>CBC</strong></th>
<th><strong>ALT, AST</strong></th>
</tr>
</thead>
</table>

Renal and auditory function on prolonged administration during renal impairment or if other nephrotoxic or neurotoxic drugs given.

## RENAL IMPAIRMENT

**Reduce dose on day 4:**

- Use half normal dose if estimated GFR is 40-60 mL/min/1.73m²
- Use ⅔ normal dose if estimated GFR is < 40 mL/min/1.73m²

## ADVERSE EFFECTS

- Leucopenia and thrombocytopenia.
- Disturbances of liver function.
**Tazocin®**

**Piperacillin + Tazobactam 4.5 g / 90 mL**

**Dose:** 50-100 mg/kg/dose (as piperacillin component) IVI over 30 min.

Na content is 2.35 mEq per gram of piperacillin.

**Piperacillin : Tazobactam = 8:1.**

Dose is calculated as for piperacillin component.

Infusion solution concentration 50 mg/mL.

<table>
<thead>
<tr>
<th>PMA (wk)</th>
<th>Postnatal (d)</th>
<th>Interval (h)</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤ 29</td>
<td>0-28</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>&gt;28</td>
<td>8</td>
</tr>
<tr>
<td>30-36</td>
<td>0-14</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>&gt;14</td>
<td>8</td>
</tr>
<tr>
<td>37-44</td>
<td>0-7</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>&gt;7</td>
<td>8</td>
</tr>
<tr>
<td>≥ 45</td>
<td>All</td>
<td>8</td>
</tr>
</tbody>
</table>

**USES**

**Non-CNS infections,** caused by susceptible β-lactamase producing bacteria (e.g. E. coli, Enterobacter, Klebsiella, H. Influenzae, Proteus mirabilis, Pseudomonas spp., and Staph. Aureus. Also effective against group B Streptococcus.

**MONITOR**

Observe IV site for signs of extravasation.

**ADVERSE EFFECTS**

Eosinophilia

Hyperbilirubinemia

↑ AST, ALT, BUN and serum creatinine.
**Tienam®**

**Imipenem / Cilastatin 500 mg / 100 mL**

**Dose:** 20-25 mg/kg/dose Q12h IVI over 30 min.

| Infusion Solution concentration | 5 mg/mL. |

**USES**

Non-CNS infections caused by bacteria, primarily Enterobacteriaceae and anaerobes, resistant to other antibiotics.

Broad-spectrum of activity includes many G+ve and G-ve bacteria and anerobes; Imipenem has good activity against *Pseudomonas aeruginosa*. Not active against MRSA and Enterococcus faecium.

**MONITOR**

- Periodic CBC
- Liver enzymes
- IV sites for phlebitis.

**RENAL IMPAIRMENT**

- Not licensed for use in children with renal impairment
- Cr Cl <70 mL/min/1.73m²⇒Reduce dose

**ADVERSE EFFECTS / PRECAUTIONS**

- Seizures in patients with meningitis, preexisting CNS pathology, and severe renal dysfunction.
- Local reaction at injection site.
- Increased platelet count and Eosinophilia.
- Elevated liver enzymes
- Diarrhea
**Unasyn®**
Ampicillin/Sulbactam 750 mg / 20 mL

**Dose:** 150 mg/kg/day IV Q8-12h.

Dose may be doubled in meningitis.

Infusion solution concentration 37.5 mg/mL.

<table>
<thead>
<tr>
<th>PMA weeks</th>
<th>Postnatal Days</th>
<th>Interval hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤ 29</td>
<td>0-28</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>&gt;28</td>
<td>8</td>
</tr>
<tr>
<td>30-36</td>
<td>0-14</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>&gt;14</td>
<td>8</td>
</tr>
<tr>
<td>37-44</td>
<td>0-7</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>&gt;7</td>
<td>8</td>
</tr>
<tr>
<td>≥ 45</td>
<td>All</td>
<td>6</td>
</tr>
</tbody>
</table>

**USES**

Broad-Spectrum bactericidal against GBS, Listeria monocytogenes and susceptible E. coli species.

**RENAL IMPAIRMENT**

Reduce dose or frequency if estimated GFR < 10 mL/min/1.73m². Rashes are more common.

**ADVERSE EFFECTS / PRECAUTIONS**

Very large doses may result in CNS excitation or seizure activity. Hypersensitivity reactions are rare in neonates (maculopapular rash, urticarial rash or fever).
**Ursogall®**
Ursodeoxycolic acid 158.5 mg / 5 mL

**Dose:** 10-15 mg/kg/dose PO Q12h

| أورسوجول شراب (٥.٥١٨.٥ مجم / ٥ ضم) | ... سم بالفم / ١٢ ساعة |

**Solution concentration** 31.7 mg/mL.

**USES**
Cholestatics associated with TPN, biliary atresia and cystic fibrosis.
Dissolve cholesterol gallstones (may take several months).

**MONITOR**
ALT, AST.
Serum direct bilirubin.

**HEPATIC IMPAIRMENT**
Avoid in chronic liver disease (but used in primary biliary cirrhosis).

**ADVERSE EFFECTS / PRECAUTIONS**
Nausea, vomiting.
Abdominal pain.
Constipation.
Flatulence.
Aluminum-containing antacids bind ursodiol and inhibit absorption.
# Vancomycin

Vancocin® 500 mg / 100 mL

- **Meningitis:** 15 mg/kg/dose IVI over 1h.
- **Bacteremia:** 10 mg/kg/dose IVI over 1h.
- **Prophylaxis of NEC:** 15 mg/kg/dose Q8h PO.
- **Intrathecal/Intraventricular:** 5-10 mg/day.

Infusion solution concentration 5 mg/mL.
IV form can be used to prepare solution for oral administration.

## PMA (wks) | Postnatal (d) | Interval (h)
--- | --- | ---
≤ 29 | 0-14 | 18
>14 | 12
30-36 | 0-14 | 12
>14 | 8
37-44 | 0-7 | 12
>7 | 8
≥ 45 | All | 6

## USES

Bactericidal against aerobic and anerobic G+ve bacteria including multi-resistant Staph. However, there are reports of Staph. aureus with ↓ susceptibility. There are ↑ reports of glycopeptide resistant Enterococci.

Penetration in to CSF is poor.

Used by mouth in prophylaxis of NEC.

## MONITOR

Renal function and IV sites for phlebitis.

## RENAL IMPAIRMENT

Reduce dose.

Monitor plasma concentration and renal function regularly.
### Vancomycin

**Vancocin® 500 mg / 100 mL**

#### ADVERSE EFFECTS / PRECAUTIONS

- **Nephrotoxicity**: (higher incidence with serum trough concentration > 10 µg/mL).
- **Ototoxicity**: (with prolonged serum peak concentration >40 µg/mL).
- **Rash and hypotension** (red man syndrome), resolves within minutes to hours – infilusion time.
- **Neutropenia** (if administrated > 3 wks).
- **Phlebitis**: Rate, dilute drug or rotate infusion sites.

#### SERUM LEVEL

Should be measured after 3-4 doses if renal function normal, earlier if renal impairment.

**Trough**: 5-10 µg/mL – 15-20 µg/mL when treating MRSA pneumonia, endocarditis or bone/joint infections (Draw 30 minutes prior to scheduled dose).

**Peak**: 30-40 µg/mL when treating meningitis (Draw 30 minutes after end of infusion).

#### INTERACTIONS WITH

- **General Anaesthetics**: hypersensitivity-like reactions.
- **Aminoglycosides**: ↑ risk of nephrotoxicity and ototoxicity.
- **Amphotericin**: possible ↑ risk of nephrotoxicity.
- **Loop diuretics**: ↑ risk of otoxicity.

If staphylococci exhibit tolerance to the drug, combine it with an aminoglycoside, with or without rifampicin.
### Valium® - Epival® - Neuril®

**Diazepam** 10 mg / 2 mL

**Slow IV:** 0.3-0.4 mg/kg repeated once after 10 min if necessary.

**PR:** 1.25–2.5 mg repeated once after 10 min if necessary.

**Infusion solution concentration** 5 mg/mL.

Avoid injections containing benzyl alcohol in neonates.

Available also as Stesolid Rectal Tubes® 2.5-5-10 mg per tube.

**Brands include:** Epival® and Neuril®.

### USES

- Status epilepticus.
- Convulsions caused by poisoning.

### ADVERSE EFFECTS / PRECAUTIONS

Close observation is required until full recovery from sedation.

When given IV, facilities for reversing respiratory depression with mechanical ventilation must be at hand.

- Muscle weakness.
- Hypotension.
- Gastro-intestinal disturbances, incontinence, urinary retention.
- Blood disorders and jaundice reported; skin reactions.

**IV injection →** Pain and thrombophlebitis.

### CONTRAINDICATIONS

- Respiratory depression.
- Marked neuromuscular respiratory weakness including unstable myasthenia gravis.

### RENAL IMPAIRMENT

Start with small doses.

Increased cerebral sensitivity.

### HEPATIC IMPAIRMENT

Reduce dose as it may precipitate coma.

Avoid in severe impairment.
### Viagra®
Sildenafil 50 mg tab. / 25 mL

<table>
<thead>
<tr>
<th>Neofax 2009:</th>
<th>0.3-1 mg/kg/dose via orogastric tube Q6-12h.</th>
</tr>
</thead>
<tbody>
<tr>
<td>BNFC 2009:</td>
<td>initially 0.25-0.5 mg/kg/dose Q4-8h, adjusted according to response; max. 2 mg/kg/dose Q4h; start with lower dose and frequency especially if used with other vasodilators; withdraw gradually.</td>
</tr>
</tbody>
</table>

Final concentration of 2 mg/mL.
Stable for 1 month if refrigerated.

### USES
- PPHN refractory to iNO and other therapies.
- Improve pulmonary blood flow in severe Ebstein’s anomaly.

### MONITOR
- Blood pressure
- Oxygenation

### HEPATIC IMPAIRMENT
- Reduce dose if not tolerated in mild to moderate impairment; avoid in severe impairment.

### RENAL IMPAIRMENT
- Reduce dose if not tolerated.

### ADVERSE EFFECTS
- Worsening oxygenation and systemic hypotension.
- Use with caution in infants with sepsis.
- ↑Risk of ROP, bleeding??
**Vitamin D**

**Decal-B₁₂® Syrup or ViDrop® Drops**

<table>
<thead>
<tr>
<th>Age</th>
<th>Dose</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 37 wks</td>
<td>10-20 μg/day (400-800 u/day) PO.</td>
</tr>
<tr>
<td>≥ 37 wks</td>
<td>10 μg/day (400 u/day) PO.</td>
</tr>
</tbody>
</table>

Administer IM for fat malabsorption.

<table>
<thead>
<tr>
<th>العربية</th>
<th>翻译</th>
</tr>
</thead>
<tbody>
<tr>
<td>ديكال-ب ١٢ شراب (١٠٠ وحدة/٥ سم) = ٤٠٠٠ سيماللحم/٣٢ ساعة</td>
<td>ديكال-ب ١٢ شراب (١٠٠ وحدة/٥ سم) = ٤٠٠٠ سيماللحم/٣٢ ساعة</td>
</tr>
<tr>
<td>في- دروب نقط (٢٨٠ وحدة/سم) = ٤٠٠٠ سيماللحم/٣٢ ساعة</td>
<td>في- دروب نقط (٢٨٠ وحدة/سم) = ٤٠٠٠ سيماللحم/٣٢ ساعة</td>
</tr>
<tr>
<td>وان- ألفا نقط (٢ ميكروجرام/سم) = ٤٠٠٠ سيماللحم/٣٢ ساعة</td>
<td>وان- ألفا نقط (٢ ميكروجرام/سم) = ٤٠٠٠ سيماللحم/٣٢ ساعة</td>
</tr>
</tbody>
</table>

**Decal-B₁₂®** = 1000 u Vit D₃, 50 mg Ca, 10 μg Vit B₁₂ per 5mL

**ViDrop®** = 2800 u Vit D₃ per 1 ml (= 28 drops)

**IM Preparations**

- **Devarol-S®** 60,000 u / 2 mLamp.
- **Sterogel®“H”** 60,000 u / 1.5 mL amp.

**Dose of One-Alpha® in neonates:** 0.05-0.1 μg/kg/day; equal to 1-2 drops/2kg/day (each drop = 0.1 μg alfacalcidol). With severe hypocalcemia, up to 40 drops/2kg/day may be needed.

(According to product information leaflet)

**USE**

- Refractory rickets
- Hypophosphatemia
- Hypoparathyroidism

**MONITOR**

- Serum Ca⁺⁺ and phosphorus.
- Alkaline phosphatase (Levels of ALP approximately 7.5 times above the adult range indicates active disease).

**ADVERSE EFFECTS / PRECAUTIONS**

- Acidosis, Hypertension and Arrhythmia

**Hypervitaminosis D:** hypercalcemia, azotemia, ↑ serum creatinine, mild hypokalemia, diarrhea, polyuria, metastatic calcification and nephrocalcinosis.
Vitaphos® Elixir
Appetizer and General Tonic with Vitamin B Complex

<table>
<thead>
<tr>
<th>Each 15 mL contains</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Vitamin B1</td>
<td>2 mg</td>
</tr>
<tr>
<td>Vitamin B2</td>
<td>1 mg</td>
</tr>
<tr>
<td>Vitamin B6</td>
<td>2 mg</td>
</tr>
<tr>
<td>Nicotinamide</td>
<td>10 mg</td>
</tr>
<tr>
<td>Calcium glycerophosphate</td>
<td>114.5 mg</td>
</tr>
<tr>
<td>Sodium glycerophosphate</td>
<td>114.5 mg</td>
</tr>
<tr>
<td>Potassium glycerophosphate</td>
<td>114.5 mg</td>
</tr>
<tr>
<td>Magnesium glycerophosphate</td>
<td>57 mg</td>
</tr>
</tbody>
</table>
# Zantac®
## Ranitidine 50 mg / 2 mL

**PO:** 2 mg/kg/dose Q8h (unreliable absorption), max. 3 mg/kg 3 times daily.

**FT IV dose:** 1.5 mg/kg/dose Q8h slow push

**PT IV dose:** 0.5 mg/kg/dose Q12h slow push

**IVI:** 0.0625 mg/kg/h

**Infusion solution concentration** 1 mg/mL.

**Syrup form is not available in Egypt yet.**

## USES
Prevention and treatment of stress ulcers and GI hemorrhage aggravated by gastric acid secretion.

## MONITOR
Gastric pH to assess efficacy.

## RENAL IMPAIRMENT
Use ½ normal dose if GFR < 50 mL/min/1.73m².

## ADVERSE EFFECTS
Thrombocytopenia ?

**In adults:** ↑AST, ALT, leucopenia and bradycardia.

**Very rarely:** interstitial nephritis.
**Zithromax®**
Azithromycin 200mg/5ml Susp. - 500 mg Vials

**Dose for Pertussis:** 10 mg/kg/dose PO Q24h for 5 days

**Dose for C. trachomatis Conjunctivitis and Pneumonitis:**
20 mg/kg/dose PO Q24h for 3 days

**IV Dose:** 5 mg/kg/dose Q24h IV over 60 min.

Don’t refrigerate. Use within 10 days once bottle has been opened.

Infusion solution concentration 1mg/mL, dilute prior to use.

**USES**
Treatment and post-exposure prophylaxis against B. pertussis.
As a substitute of penicillin.

**MONITOR**
GI Tolerance.

**HEPATIC IMPAIRMENT**
Avoid, jaundice reported.

**ADVERSE EFFECTS / PRECAUTIONS**
Diarrhea and/or vomiting (5-12%).
Irritability, rash and blood in stool.
Pyloric stenosis ?!
**Zyvox®
Linezolid 200 mg / 100 ml**

**Dose:** 10 mg/kg/dose Q12h if < 1 wk old, and Q8h after that!VI over 30-120 min. Treatment is usually continued for 2 wks.

Infusion solution concentration 2 mg/mL.

**USES**
Only used, on microbiological advice, to treat MRSA and VRE infection.

Active against a range of **G+ve** bacteria, including MRSA, VRE and resistant strains of Strep. pneumoniae. Active against some **anaerobes**, including Clostridium perfringens, Clostridium difficile and Bacteroides fragilis.

Enterobacteriaceae and Pseudomonas aeruginosa are not susceptible.

**MONITOR**
Blood pressure during co-administration with any sympathomimetic drugs.
Monitor CBC (including platelet count) weekly

**HEPATIC IMPAIRMENT**
No dose adjustment is necessary but in severe hepatic impairment use only if potential benefit outweighs risk.

**RENAL IMPAIRMENT**
No dose adjustment necessary but metabolites may accumulate if estimated GFR < 30 mL/min/1.73m².

**ADVERSE EFFECTS / PRECAUTIONS**
Reversible thrombocytopenia (when given for more than 10–14 days).
A higher incidence of blood disorders and optic neuropathy have been reported in patients receiving **Zyvox** for more than the maximum recommended duration of 28 days.

Diarrhea (antibiotic-associated colitis) and vomiting.

**Less commonly** dry mouth, glossitis, stomatitis, tongue discoloration, abdominal pain, gastritis, constipation, pancreatitis, hypertension, fever, polyuria, anemia, leucopenia, eosinophilia, electrolyte disturbances, blurred vision, rash and injection-site reactions

**Very rarely** renal failure, pancytopenia and Stevens-Johnson syndrome; lactic acidosis; peripheral and optic neuropathy.
## Addamel N®
### Trace Elements

**Contents Per mL**
- **Chromic Cl**: 5.33 mcg
- **Copper chloride**: 0.34 mg
- **Xylitol**: 300 mg
- **FeCl₃**: 0.54 mg
- **K iodide**: 16.6 mcg
- **Manganese Cl**: 99 mcg
- **Na fluoride**: 0.21 mg
- **Na molybdate**: 4.85 mcg
- **Na selenite**: 10.5 mcg
- **ZnCl₂**: 1.36 mg

## Soluvit N®
### Water-Soluble Vitamins

**Contents Per Vial**
- **Thiamine nitrate**: 3.1 mg
- **Sodium riboflavine phosphate**: 4.9 mg (corresponding to Vitamin B₁₂ 3.6 mg)
- **Nicotinamide**: 40 mg
- **Pyridoxine hydrochloride**: 4.9 mg (corresponding to Vitamin B₆ 4.0 mg)
- **Pantothenic acid**: 15.0 mg
- **Sodium ascorbate**: 113 mg (corresponding to Vitamin C 100 mg)
- **Biotin**: 60 microgram
- **Folic acid**: 400 micrograms
- **Cyanocobalamin**: 5.0 microgram
- **Glycine**: 300 mg
- **Edetate sodium**: 500 micrograms (with preservative, 500 micrograms methyl hydroxybenzoate)

## Vitalipid N®
### Fat-Soluble Vitamins

**Per mL Vitalipid N Adult**
- **Retinol**: 99 mcg
- **Calciferol**: 0.5 mcg
- **α-tocopherol**: 0.91 mg
- **Phytomenadione**: 15 mcg
- **Fractionated soybean oil**: 100 mg
- **Fractionated egg phospholipids**: 12 mg

**Per mL Vitalipid N Infant**
- **Retinol**: 69 mcg
- **Calciferol**: 1 mcg
- **α-tocopherol**: 0.64 mg
- **Phytomenadione**: 20 mcg
- **Fractionated soybean oil**: 100 mg
- **Fractionated egg phospholipids**: 12 mg