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|  |  What is the IV to IM dosing conversion for the following medications:1. Magnesium sulfate 4 gram loading 2 grams an hour 2. Ampicillin 1 gram q 4 hours 3. Cefazolin 2 gram x 1 4. Clindamycin 600 q 8 hrs5. Gentamicin for a 70 kg person 24 hour dosing6. Fentanyl 100 mcg iv7. Labetalol 40 mg iv8. Hydralazine 10 mg iv |
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| **CAUTION!** | Patients on anticoagulants or at risk of hemorrhage should not receive Intramuscular injections due to their increased risk of hematoma.  |

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| Medication | IV dosing | Recommended IM dosing | Max Concentration | Intramuscular PK |
| Magnesium sulfate  | 4 gram loading dose, then 2g/hr infusion | [original study also give 4g IV Loading Dose], followed by 4-5g IM in each buttock then in alternating buttocks every 4 hours – (max 40g) Given as **20%** solution IV in study followed by **50%** solution IM.  | 500mg/mL  | (studied for anticonvulsant activity)Onset 1h, duration 3-4h (vs 30min for IV) |
| Ampicillin | 1 gram q 4 hours | 1g IM every 4 hours(Equivalent dosing IV:IM) | Reconstitute 500mg vials with 1.8mL or 1g vial with 3.5mL to concentration of 250mg/mL |  |
| Cefazolin | 2 g IV  x 1  | 2 g IM x1(Equivalent dosing IV:IM) | Reconstitute 1g vials with 2.5mL to concentration of 330mg/mL | Peak levels 0.5-2H.Duration 2 hr half-life equivalent to IV |
| Clindamycin  | 600mg IV q8hrs | 600mg IM q8hrs(Equivalent dosing IV:IM) | 150mg/mL(Max dose: 600mg) | Peak levels 1-3 hr |
| Gentamicin   | 5-7mg/kg IV q24h | 5-7mg/kg IM once dailySlower absorption and lower peak concentrations may occur following IM injection.  | 40mg/mL | Peak 30-90min (IM) vs 30min (IV)   |
| Fentanyl  | 100 mcg IV | 100mcg IM(Equivalent dosing IV:IM) | 50mcg/mL | Onset 7-8min, duration 1-2 hours (vs 30-60min IV)  |
| Labetalol  | 40 mg IV | No information found supporting IM administration | 5mg/mL |  |
| Hydralazine  | 10 mg IV (Pre-eclampsia) Initial dose: 5mg (Hypertensive Emergency):10–40 mg IV | 10mg IM(Pre-eclampsia) Initial dose: 10 mg IM (change drug if needing >30mgIM)(Hypertensive Emergency): 10–20 mg IM | 20mg/mL |  |