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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 hrs  5. Gentamicin for a 70 kg person 24 hour dosing  6. Fentanyl 100 mcg iv  7. Labetalol 40 mg iv  8. 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 daily  Slower 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 |  |