Physical Compatibility of Intravenous (IV) Anti Infective Drugs with Medications Commonly Used in Intensive Care Units (ICUs).

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Introduction

Patients hospitalized in ICUs often require the use of multiple drugs and the IV route is the most commonly way of administration. IV accesses are usually limited, leading to concomitant administration of different drugs in the same infusion line.

Objectives

Materials & Methods

Results

DRUGS | CONC. | SOLVENT | RESULTS | DRUGS | CONC. | SOLVENT | RESULTS
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Amphotericin B liposomal | 1.16 mg/mL | G5% | P | Cefotaxime | 83.3 mg/mL | G5% | C
Vancomycin | 10, 62.5 - 83.3 mg/mL | G5% | P | Insulin | 1 UI/mL | None
Aminocillin | 20.8 - 83.3 mg/mL NaCl 0.9% | C | Cefotaxime | 83.3 mg/mL | G5% | C
Heparin sodium | 208 UI/mL | NaCl 0.9% | C | Levetiracetam | 20.8 mg/mL | NaCl 0.9% | C
Aminocillin | 20.8 - 83.3 mg/mL NaCl 0.9% | C | Cefotaxime | 41.6 mg/mL | G5% | C
Insulin | 1 UI/mL | NaCl 0.9% | C | Ornidazole | 208 UI/mL | NaCl 0.9% | C
Aminocillin | 20.8 mg/mL | G5% | S | Cefotaxime | 83.3 mg/mL | G5% | C
Magnesium sulfate | 6 mg/mL | NaCl 0.9% | S | Thiamine | 0.4 mg/mL | G5% | C
Aminocillin | 20.8 mg/mL | G5% | S | Cotrimoxazole | 3.2/0.64 - 80/16 mg/mL | G5% | P
Nefopam | 0.16 mg/mL | NaCl 0.9% | S | Heparin sodium | 208 UI/mL | NaCl 0.9% | S
Aminocillin | 20.8 mg/mL | G5% | S | Cotrimoxazole | 3.2/0.64 - 80/16 mg/mL | G5% | S
Pyridoxine | 0.5 mg/mL | NaCl 0.9% | S | Daptomycin | 21 mg/mL | NaCl 0.9% | C
Aminocillin | 20.8 mg/mL | G5% | S | Thiamine | 0.2 mg/mL | NaCl 0.9% | C
Thiamine | 0.2 mg/mL | G5% | S | Fluconazole | 2 mg/mL | NaCl 0.9% | C
Aminocillin | 20.8 mg/mL | G5% | P | Thiamine | 0.2 mg/mL | NaCl 0.9% | C
Vancomycin | 31.3 mg/mL | G5% | P | Gentamicin | 4.17 mg/mL | G5% | C
Cefazolin | 41.6 mg/mL | G5% | S | Nefopam | 0.16 mg/mL | NaCl 0.9% | C
Cotrimoxazole | 3.2/0.64 - 80/16 mg/mL | G5% | S | Linezolid | 2 mg/mL | NaCl 0.9% | C
Cefazolin | 41.6 mg/mL | G5% | C | Insulin | 1 UI/mL | - | C
Cefazolin | 41.6 mg/mL | G5% | C | Heparin sodium | 208 UI/mL | NaCl 0.9% | C
Levofloxacin | 5 mg/mL | G5% | C | Ornidazole | 31.3 mg/mL | NaCl 0.9% | C
Cefazolin | 41.6 mg/mL | G5% | C | Ornidazole | 31.3 mg/mL | NaCl 0.9% | C
Nefopam | 0.16 mg/mL | NaCl 0.9% | S | Insulin | 1 UI/mL | NaCl 0.9% | C
Cefazolin | 41.6 mg/mL | G5% | C | Piperacillin/tazobactam | 166/20.8 mg/mL | WFI | C
Pantoprazole | 4 mg/mL | NaCl 0.9% | C | Piperacillin/tazobactam | 166/20.8 mg/mL | WFI | C
Cefepim | 83.3 mg/mL | G5% | S | Levetiracetam | 20.8 mg/mL | NaCl 0.9% | C
Daptomycin | 21 mg/mL | NaCl 0.9% | S | Levetiracetam | 20.8 mg/mL | NaCl 0.9% | C
Cefepim | 83.3 mg/mL | G5% | C | Piperacillin/tazobactam | 166/20.8 mg/mL | WFI | C
Cefepim | 83.3 mg/mL | G5% | C | Pipercillin/tazobactam | 166/20.8 mg/mL | G5% | C
Thiamine | 0.2 mg/mL | NaCl 0.9% | C | Pipercillin/tazobactam | 166/20.8 mg/mL | G5% | C
Cefepim | 83.3 mg/mL | G5% | C | Thiamine | 0.4 mg/mL | G5% | C
Voriconazole | 8 mg/mL | G5% | C | Spiramycin | 0.06 MU/mL | NaCl 0.9% | C
Cefazoline | 41.6 and 125 mg/mL G5% | S | Heparin sodium | 208 UI/mL | NaCl 0.9% | C
Heparin sodium | 208 UI/mL | NaCl 0.9% | C | Vancomycin | 31.3 mg/mL | G5% | C
Cefazolin | 83.3 mg/mL | G5% | C | Nefopam | 0.16 mg/mL | NaCl 0.9% | C
Hydrocortisone | 2 mg/mL | NaCl 0.9% | S | Nefopam | 0.16 mg/mL | NaCl 0.9% | C

Conc. : concentration ; WFI : water for injection ; C : compatible ; P : precipitation ; S : incompatibility after subvisuel modification

Conclusion

This study demonstrated that some incompatible drugs were mixed before administration to the patient. After laboratory tests, new incompatibilities were found which gives additional information to the literature. However, many other mixtures should be still studied due to missing data.