



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

Observation of administration of anti-infective drugs in 3 ICUs

Materials & Methods

Inclusion criteria
- more than 1 IV drug
- an anti-infective drugs
- in the same line (Y-site or mixture)

Compare with compatibility data available in 3 databases

- The Handbook on Injectable Drugs®
- King Guide to Parenteral Admixtures®
- Stabilis®
www.stabilis.org

In the absence of compatibility data : physical compatibility tests.

- 3 tests** : drug A /drug B
-1/9 ; 5 /5 ; 9/1
-*Visual modification* : precipitation, colour change, gas formation.
-*Subvisual evaluation* : UV spectrophotometry at 350, 410 and 550 nm.

Results

② 37 pairs of two drugs tested

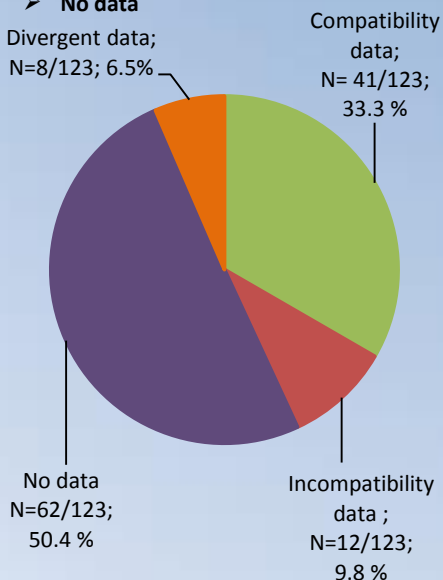
➢ 27 /37 compatible pairs (73.0 %) and 10/37 incompatible pairs (27.0 %)

① Observation of administration :

- 123 pairs of two drugs

CRITERIA :

- **Compatibility data** : available in the literature with concentrations equal to or higher than those observed
- **Incompatibility data** : available in the literature regardless of the concentrations, the solvent and the container
- **Divergent data** : compatibility and incompatibility data available in the literature.
- **No data**



DRUGS	CONC.	SOLVENT	RESULTS	DRUGS	CONC.	SOLVENT	RESULTS
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%		Insulin	1 UI/mL	None	
Amoxicillin	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%		Levetiracetam	20.8 mg/mL	NaCl 0.9%	
Amoxicillin	20.8 - 83.3 mg/mL	NaCl 0.9%	C	Cefotaxime	41.6 mg/mL	G5%	C
Insulin	1 UI/mL	NaCl 0.9%		Ornidazole	208 UI/mL	NaCl 0.9%	
Amoxicillin	20.8 mg/mL	G5%	S	Cefotaxime	83.3 mg/mL	G5%	C
Magnesium sulfate	6 mg/mL	NaCl 0.9%		Thiamine	0.4 mg/mL	G5%	
Amoxicillin	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%		Heparin sodium	208 UI/mL	NaCl 0.9%	
Amoxicillin	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%		Insulin	1 UI/mL	-	
Amoxicillin	20.8 mg/mL	G5%	S	Daptomycin	21 mg/mL	NaCl 0.9%	C
Thiamine	0.2 mg/mL	G5%		Thiamine	0.2 mg/mL	NaCl 0.9%	
Amoxicillin	20.8 mg/mL	G5%	P	Fluconazole	2 mg/mL	-	C
Vancomycin	31.3 mg/mL	G5%		Thiamine	0.2 mg/mL	NaCl 0.9%	
Cefazolin	41.6 mg/mL	G5%	S	Gentamicin	4.17 mg/mL	G5 %	C
Cotrimoxazole	3.2/0.64 - 80/16 mg/mL	G5%		Nefopam	0.16 mg/mL	NaCl 0.9%	
Cefazolin	41.6 mg/mL	G5%	C	Linezolid	2 mg/mL	NaCl 0.9%	C
Levetiracetam	5.2 and 20.8 mg/mL	NaCl 0.9%		Insulin	1 UI/mL	-	
Cefazolin	41.6 mg/mL	G5%	C	Ornidazole	31.3 mg/mL	NaCl 0.9%	C
Levofloxacin	5 mg/mL	-		Heparin sodium	208 UI/mL	NaCl 0.9%	
Cefazolin	41.6 mg/mL	G5%	S	Ornidazole	31.3 mg/mL	NaCl 0.9%	C
Nefopam	0.16 mg/mL	NaCl 0.9%		Insulin	1 UI/mL	NaCl 0.9%	
Cefazolin	41.6 mg/mL	G5%	C	Piperacillin/tazobactam	166/20.8 mg/mL	WFI	C
Pantoprazole	4 mg/mL	NaCl 0.9%		Insulin	1 UI/mL	-	
Cefepim	83.3 mg/mL	G5%	C	Piperacillin/tazobactam	166/20.8 mg/mL	G5%	C
Daptomycin	21 mg/mL	NaCl 0.9%		Levetiracetam	20.8 mg/mL	NaCl 0.9%	
Cefepim	83.3 mg/mL	G5%	C	Piperacillin/tazobactam	166/20.8 mg/mL	G5%	C
Thiamine	0.2 mg/mL	NaCl 0.9%		Thiamine	0.4 mg/ml	G5%	
Cefepim	83.3 mg/mL	G5%	C	Spiramycine	0.06 MUI/mL	NaCl 0.9%	C
Voriconazole	8 mg/mL	G5%		Heparin sodium	208 UI/mL	NaCl 0.9%	
Cefotaxime	41.6 and 125 mg/mL	G5% -NaCl 0.9%	C	Vancomycin	31.3 mg/mL	G5%	C
Heparin sodium	208 UI/mL	NaCl 0.9%		Nefopam	0.16 mg/mL	NaCl 0.9%	
Cefotaxime	83.3 mg/mL	G5%	S	Voriconazole	8 mg/mL	G5%	C
Hydrocortisone	2 mg/mL	NaCl 0.9%		Heparin sodium	208 UI/mL	NaCl 0.9%	
				Voriconazole	8 mg/mL	G5%	C
				Thiamine	0.2 mg/mL	NaCl 0.9%	

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.

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