dermatology, paediatrics and pneumology departments according to heterogeneous protocols. For the diagnosis of non-marketed allergens, only OPTs preparations are made in our hospital pharmacy. SKs are manufactured extemporaneously by nurses before administration.

Purpose Following a dermatologist's request that ATs be performed in day hospital, we decided that drugs will be manufactured by the pharmacy and that it was necessary to harmonise protocols of different services. But how should it be put in place?

Material and methods Establishment of a working group comprising pharmacists, pulmonologists, dermatologists, paediatricians, doctor of medical information and the financial affairs department to: determine allergens to be tested; work on a homogenisation of protocols; determine the correct codification of acts for the costing of the care; determine an organisation between the prescribers' requests; and a preparation of ATs by the pharmacy, according to processes similar to other institutions.

Results Five drug classes have been identified as priorities for development: antibiotics, analgesics, local anaesthetic drugs, iodinated contrast products and nonsteroidal anti-inflammatory drugs. ATs will be made in day hospital one day per week for all medical specialties, and their manufacture will be carried out the day before by the pharmacy. During the implementation of these ATs, we encountered difficulties in standardising protocols. Indeed in paediatrics, the target dose of these tests varies according to the weight of the child. In addition to this, it is necessary to produce duplicate SKs to prevent the failure of administration due to children's movements. We therefore decided to standardise adult protocols separately from paediatrics.

Conclusion This work required close collaboration between prescribers and pharmacists. It will allow for better patient management, ATs manufacturing according to good preparation practices guidelines, but also significant financial value through day hospital costing. A study of the stability of dilutions of molecules tested will subsequently be necessary.

REFERENCES AND/OR ACKNOWLEDGEMENTS

No conflict of interest.

3PC-014 STABILITY OF 1 MG/ML AND 4 MG/ML HYDROCORTISONE SODIUM SUCCINATE SOLUTIONS IN 0.9% SODIUM CHLORIDE AND 5% GLUCOSE

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Background Hydrocortisone in high doses is given to haemodynamically unstable patients as a vasopressor. Frequently the same patients have volume restriction, and high concentrations of hydrocortisone are necessary. Although there is no certain evidence of the benefits of continuous infusion over bolus injection, continuous infusion is a well-established practice in our hospital. Manufacturers state that the solution after reconstitution and dilution should be used immediately, however it is not defined how long this infusion can be used after application. There are limited data on the stability of hydrocortisone in concentrations greater than 1 mg/ml.

Purpose The aim of our study was to determine the physical and chemical stability of hydrocortisone sodium succinate in two concentrations (1 mg/ml and 4 mg/ml) at room temperature up to 24 hours after reconstitution and dilution. These are the most frequent circumstances in the wards in our hospital.

Material and methods We used duplicate samples of hydrocortisone sodium succinate diluted in 0.9% sodium chloride and 5% glucose to concentrations 1 mg/ml and 4 mg/ml. Samples were stored at room temperature (25°C) and at elevated temperature (30°C). Another set of reconstituted and diluted solutions stored at room temperature was protected from light. Concentrations were measured by a validated high-performance liquid chromatography (HPLC) method to determine the percentage of degradation after 3, 5, 7, 9, 12, 24 and 48 hours.

Results Our study demonstrates that hydrocortisone is equally stable at concentrations 1 mg/ml and 4 mg/ml, in both 0.9% sodium chloride and 5% glucose, regardless whether it is protected from light or not. At room temperature, degradation of hydrocortisone after 12, 24 and 48 hours was 3%, 5% and 10%, respectively. Declines from the initial hydrocortisone concentration in samples stored at 30°C after 3, 5, 12 and 24 hours were 3%, 5%, 9% and 14% respectively.

Conclusion Hydrocortisone sodium succinate is physically and chemically stable for 12 hours at 25°C.

REFERENCES AND/OR ACKNOWLEDGEMENTS

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No conflict of interest.

3PC-015 PHYSICOCHEMICAL STABILITY OF CEFOTAXIME IN POLYPROPYLENE SYRINGES AT HIGH CONCENTRATIONS FOR INTENSIVE CARE UNITS

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Background Cefotaxime is an antibiotic used to treat severe infections such as in intensive care units (ICUs). The dose of cefotaxime can vary from 3 g to 24 g per day and the literature has demonstrated that continuous administration is the preferred mode of administration. In ICUs, a minimum volume is used for patients requiring fluid restriction, leading to high concentrations of cefotaxime.

Purpose The objective was to study the stability of cefotaxime solutions at 83.3 mg/mL and 125 mg/mL, diluted in 0.9% sodium chloride (0.9% NaCl) or 5% glucose (G5%), in polypropylene syringes after preparation and after a 6 hour and 12 hour storage at 20°C–25°C.

Material and methods Three syringes for each condition were prepared. At each time of analysis, three samples for each syringe were prepared and analysis by high-performance liquid chromatography (HPLC) coupled to a photodiode array detector. The method was validated according to the International Conference on Harmonisation Q2 (R1). Physical stability was evaluated by visual and subvisual inspection (turbidimetry by UV spectrophotometry at 350, 410 and 550 nm as recommended by the European Consensus Conference). pH and osmolality values were measured.

Results For each solvent, cefotaxime solutions at 83.3 mg/mL and 125 mg/mL retained more than 90% of the initial concentration after 12 hours. During the study, pH values decreased slightly, the intensity of the yellow colour increased and absorbance values increased progressively for each wavelength and each condition. An additional peak with a relative retention at 3.01 was also observed after the forced degradation gradually increased up to 4.01% in 0.9% NaCl and 3.17% in G5% of the total surface area of the peaks present on the chromatogram after 12 hours.

Conclusion In view of the results and despite the fact that the solutions retained more than 90% of the initial concentration after HPLC analysis, we propose to limit the stability of cefotaxime in 0.9% NaCl and G5% at 83.3 and 125 mg/mL at 6 hours. These stability data of highly concentrated solutions provide additional knowledge to assist ICUs in daily practice. Highly concentrated cefotaxime solutions are unstable after a 6 hour storage and cannot be administered as a daily infusion.

REFERENCES AND/OR ACKNOWLEDGEMENTS

No conflict of interest.

3PC-016 PHYSICOCHEMICAL STABILITY OF VANCOMYCIN HYDROCHLORIDE IN POLYPROPYLENE SYRINGES AT HIGH CONCENTRATIONS FOR INTENSIVE CARE UNITS

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Background In severe infections such as in intensive care units (ICUs), the recommended dose of vancomycin may be 60 mg/kg/day. Studies demonstrated that continuous infusion of vancomycin allowed rapid target concentration. In ICUs, a minimum volume is used to avoid fluid overload for patients requiring fluid restriction, leading to high concentrations of vancomycin.

Purpose The first objective of this work was to study the impact of an electric syringe pump on physical stability. The second objective was to study the stability of vancomycin solutions at 62.5 mg/mL and 83.3 mg/mL, diluted in two solvents: 0.9% sodium chloride or 5% glucose, in polypropylene syringes after the preparation and after a 6 hour, 24 hour and 48 hour storage at room temperature.

Material and methods Chemical stability was analysed by high-performance liquid chromatography coupled to a photodiode array detector at each time of analysis. The method was validated according to the International Conference on Harmonisation Q2 (R1). Physical stability was evaluated by visual and subvisual inspection (turbidimetry by UV spectrophotometry at 350, 410 and 550 nm as recommended by the European Consensus Conference). Three syringes for each condition were prepared. At each time of analysis, three samples were analysed for each syringe. pH and osmolality values were evaluated at each moment of the analysis. Chemical stability was defined as not less than 90% of the initial concentration.

Results The action of an electric syringe pump did not cause visual modification. Vancomycin diluted in 0.9% sodium chloride at 62.5 mg/mL and at 83.3 mg/mL retained more than 90% of the initial concentration after 48 hours and 24 hours respectively. Diluted in 5% glucose and stored at 20°C–25°C, vancomycin solutions at 62.5 mg/mL and 83.3 mg/mL retained

more than 90% of the initial concentration after 48 hours. Some precipitates were visible after 48 hour storage for the vancomycin syringe at 83.3 mg/mL in 0.9% sodium chloride. In other conditions, no visual modification was observed.

Conclusion Vancomycin hydrochloride diluted in 5% glucose at 62.5 mg/mL and 83.3 mg/mL were physically and chemically stable over a period of 48 hours at room temperature. For high concentrations of vancomycin, 5% glucose as solvent is recommended.

REFERENCES AND/OR ACKNOWLEDGEMENTS

No conflict of interest.

3PC-017 PHYSICAL COMPATIBILITY OF INTRAVENOUS ANTI-INFECTION DRUGS WITH MEDICATIONS COMMONLY USED IN INTENSIVE CARE UNITS

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Background In intensive care units (ICUs), intravenous (I.V) accesses are usually limited, leading to concomitant administration of different drugs in the same infusion line.

Purpose The objectives were: to perform an observation of the administration of anti-infective drugs (antibiotics, antiviral and antifungal drugs) in the ICUs; to compare with compatibility data available in the literature; and in the absence of compatibility data, to test the physical compatibility in our laboratory.

Material and methods Between April and June 2018, an observational prospective study was realised over 2 weeks in each of the three ICUs selected. Patients receiving more than one I.V drug including an anti-infective drug in the same line simultaneously (Y-site injection or mixed in the same container) were included. All I.V. drugs were recorded as concentration, solvent, type of container and flow rate. Compatibilities were assessed pairwise by using three databases: The Handbook on Injectable Drugs 19th edition, King Guide to Parenteral Admixtures and Stabilis.

For missing data, three tests were realised for some pairwise: (drug A/drug B): 1 mL/9 mL; 9 mL/1 mL; and 5 mL/5 mL. Drugs were considered compatible if no precipitate, colour change or gas formation were observed after preparation and after a 1 hour and 4 hour storage at room temperature. For subvisual evaluation, turbidimetry by UV spectrophotometry was performed at 350, 410 and 550 nm as recommended by the European Consensus Conference.

Results A total of 123 associations between an anti-infective drug and another medication were observed. According to the literature, 33.3% (n=41/123) associations were compatible, 9.8% (n=12/123) were incompatible, 6.5% (n=8/123) had divergent data according to the databases and 50.4% (n=62/123) had no data available. Thirty-eight pairwise mixtures were studied. After laboratory tests, 71.0% (n=27/38) were evaluated as physically compatible, 7.9% (n=3/38) were found to be incompatible after visual evaluation and 21.1% (n=8/38) after only subvisual evaluation.

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.