STABILITY OF 1 MG/ML AND 4 MG/ML

Physicochemical Stability of Cefotaxime

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

Sincere thanks to pharmacists in the chair of biopharmaceutics and pharmacokinetics in supporting my idea and completing the survey.

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 (5G%), 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 condition 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.