

Introduction

Vyxeos® 44mg/100mg is a daunorubicine and cytarabine liposome indicated in patient newly diagnosed with acute myeloid leukemia (t-AML) or acute myeloid leukemia (AML) with myelodysplasia-related changes (AML-MRC).

Since February 2019, 7 patients have been treated by Vyxeos® in the hematology department. These patients were all polymedicated and received complex infusion increasing the risk of the appearance of Y site incompatibilities.

There is a lack of data on Y site compatibility of Vyxeos® with others drugs while these phenomena are well described with cytarabine and daunorubicine.

The aim of this study is to evaluate the visual Y site compatibility of Vyxeos® with selected drugs.

Results

Most of the test drugs were compatible with Vyxeos®.

➤ 3 drugs exhibited visual incompatibilities with Vyxeos® at T = 0 and T = 90 minutes: amikacin, vancomycin and trimethoprim-sulfamethoxazole.

➤ However 7 drugs presented incompatibilities using DLS: amikacin, amiodarone, gentamicin, magnesium chloride, piperacillin-tazobactam, trimethoprim-sulfamethoxazole and vancomycin.

The combination with heparin sodium presented conflicting data and thus classified as variable compatibility.

Discussion-Conclusion

Knowledge and management of Vyxeos® Y site compatibilities are a major challenge in pharmaceutical care. This study underlines the drugs who must not be Y site injected with Vyxeos®. Besides, the study shows that DLS method is a more discriminant method as compared with visual analysis to detect incompatibilities.

Methods

- 33 drugs were tested
- Y-site evaluation by mixing 2 mL of Vyxeos® (in NaCl 0.9% final concentration 0.4 mg/mL) and 2 mL of tested drugs.
- Medication mixtures were analysed :
 - immediately after contact (T=0) and
 - 90 minutes after (T=90), stored at room temperature (25°C).
- The particle analyses were performed visually and by Dynamic Light Scattering (DLS) in duplicate.
- Drugs couple were classified in three categories: compatible, incompatible and variable compatibility (when dubious phenomenon appears).



Picture 1 : Dynamic Light Scattering

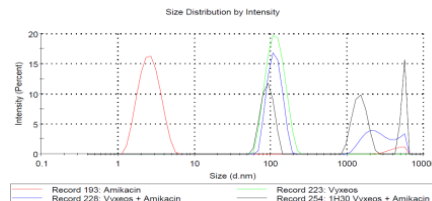


Figure 1 : Size distribution of Vyxeos® and Amikacin



Picture 2 : Vyxeos® and Amikacin Y site after 90 minutes

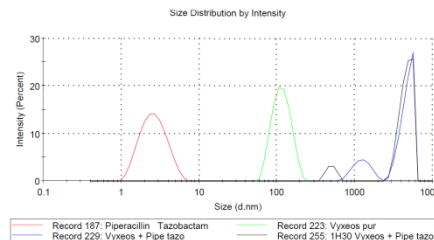


Figure 2 : Size distribution of Vyxeos® and Piperacillin-Tazobactam



Picture 3 : Vyxeos® and Piperacillin-Tazobactam Y site after 90 minutes