COMPATIBILITY AND STABILITY OF ONDANSETRON AND MIDAZOLAM MIXTURES USED IN PALLIATIVE CARE

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Background and importance Different factors can influence the compatibility and stability of the mixture: drug type, concentration, solvent, container, temperature and light. There are some mixtures of drugs with proven stability, but there is a lack of evidence about the stability and compatibility of the combination of ondansetron and midazolam. The objective of this investigation was to study the compatibility and stability of a binary mixture of these drugs in solution for subcutaneous infusion in palliative care

Aim and objectives To evaluate the compatibility and stability of two admixtures of ondansetron and midazolam at two different temperatures (25°C and 37°C). The concentrations of the admixtures were 0.1 g/L–0.1 g/L and 0.5 g/L–1.0 g/L in NaCl 0.9% stored in elastomeric infusors protected from light Material and methods Samples were prepared and diluted in NaCl 0.9% in elastomeric infusors in triplicate to obtain four different conditions of concentration and/or storage temperature (0.1 g/L–0.1 g/L; 0.5 g/L–1.0 g/L for ondansetron and midazolam, respectively, stored at temperatures of 25°C and 37°C). The concentration of each drug was periodically determined using HPLC-UV and UV-Vis spectrophotometry methods in the analytical chemistry laboratory between February and June 2019. Conditions: C18 column, mobile phase methanol: KH2PO40.05 M, adjusted to pH 3 with H3PO3 (60:40, v/v) delivered at a flow rate of 1.0 mL/min. The sample injection volume was 20 mL, and triplicate injections were performed for every sample. The signal was recorded over 14 min and the retention times were 4.1 min for ondansetron and 7.8 min for midazolam. Ondansetron and midazolam concentrations were determined at 254 nm.

Results HPLC-UV and UV-Vis spectrophotometric methods gave the same results. The stability of the admixtures diluted in NaCl 0.9% were as follow: ondansetron–midazolam (0.1 mg/mL–0.1 mg/mL and 0.5 mg/mL –1.0 mg/mL) were stable(retained >90% of their initial concentrations) for only 1 day at 25°C and 37°C, respectively

Conclusion and relevance Recommended use is for a maximum of 1 day, at the concentrations evaluated; over time it tends to precipitate. Infuser conditioning decreases stability with respect to other conditioning materials, so other stability studies may not be extrapolated if stored under different conditions.

REFERENCES AND/OR ACKNOWLEDGEMENTS

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