

Implementation of the gravimetric analysis in the pharmacy department

Gimeno-Ballester, V.; Larrodé, I.; Uriarte, M.; Pascual, O.; Real, J.M.; Agustín, M.J.; Palomo, P.; Abad, M.R.
Universitary Hospital Miguel Servet, Pharmacy, Zaragoza, Spain

BACKGROUND

The parenteral nutritions (P.N.) are multicomponent intravenous mixtures of high complexity and are considered high-risk medications. The monitoring systems are needed to reduce the morbidity and mortality of the P.N. in the patients.

PURPOSE

To expose the implantation of the gravimetric process weighing for the future implementation and increase the quality and safety in the preparation of the parenteral nutrition (PN).

MATERIAL AND METHODS

The quality of the P.N. preparation was established by calculating the accuracy (the mean of the error in the gravimetric analyses (EGA)) and precision (square root of the mean square of the EGA), and the alert limits were defined in $\pm 5\%$.

The first step was determinate the densities of the components of the P.N. and update the parenteral nutrition program. The P.N. labels were modified to show us the theoretical weight of the P.N. and the maximum and minimum limits allowed.

RESULTS

The first 67 days were made 150 parenteral nutritions in the neonatology department. The average theoretical weight was 323.68 g (± 236.04) and the average measured weight was 323.45 g (± 239.94). The mean difference of the actual weight versus the theoretical was 2.8 % (± 0.04).

CONCLUSIONS

The gravimetric analysis is a strategy to control the accuracy and precision in the P.N. and complements the quality assurance processes defined to improve the preparation.