by the increase in image acquisition. For Tektrotyd, image acquisition of the patient was performed during 1.5 hours with gamma camera 1 and 4 hours after radiopharmaceutical injection. Thus, a delay greater than 2 hours will disorganise the patient's care in the nuclear medicine department.

Conclusion These radiopharmaceuticals repackaged in plastic medical devices retained their quality after dispensing and prolonged storage for up to 2 hours.

REFERENCES AND/OR ACKNOWLEDGEMENTS

No conflict of interest.

3PC-040

HEALTH HAZARDS OF RAW MATERIALS USED IN THE COMPOUNDING OF PHARMACEUTICALS FORMULATIONS

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Background The National Institute for Occupational Safety and Health (NIOSH) has studied only the hazards of marketed drugs, excluding raw materials (RM). For this reason, it is necessary to study the hazards of RM used in the compounding of pharmaceuticals formulations.

Purpose Analyse and establish the hazards of RM used in our pharmacy department. Also, classify the type of health hazards of RM in order to establish protective measures (PM) when handling them.

Material and methods Descriptive study carried out in June to September 2018. All safety data sheets (SDS) of RM (provided by Fagron) used in our hospital were reviewed. Regulation No 1272/2008 of the Classification, Labelling and Packaging of substances and mixtures (CLP) establishes a system for identifying chemical risk. Health hazards are found in the range H300–H373. We subdivided RM with health hazards into four groups depending on toxicity properties: Group 1 (G1): carcinogenic (H350–H351); Group 2 (G2): mutagenic/teratogenic (H340–H341); Group 3 (G3): reproduction/breastfeeding toxicity (H360–H361); and Group 4 (G4): others (ocular, cutaneous, gastrointestinal or respiratory toxicity). Finally, we established PM to prevent hazards when handling RM.

Results Eighty-one RM were analysed. Thirty-three (40.7%) were not classified according to CLP regulations, so they were excluded. Twenty-three RM (28.4%) had no health hazards. Finally, 25 RM (30.9%) were found with any health hazards, of which 13 belonged to any of the groups G1–G3. G1: six RM (7.4%): atenolol, budesonide, diltiazem, spironolactone, phenobarbital and furosemide; G2: one RM (1.2%): phenol; and G3: seven RM (8.6%): boric acid, dexamethasone, disodium tetraborate, triamcinolone acetonide, clobetasol, captopril and phenobarbital. The other 12 RM were in G4. Regarding PM, we established the use of Biological Safety Cabinet Class I to handle G1–G3 RM and the use of personal protective equipment including gloves, protective gown and respiratory protection. It is worth stressing that marketed drugs containing the following active pharmaceutical ingredients analysed atenolol, budesonide, diltiazem, phenobarbital, furosemide, dexamethasone, triamcinolone acetonide, clobetasol and captopril are not included in the NIOSH list.

Conclusion Approximately one-third of RM analysed have any health hazards. It is necessary to review the hazards of RM used in pharmacy departments to prevent workers' occupational exposure. Despite CLP regulation, there are plenty of RM that remain unclassified. Further studies related to hazardous RM are necessary.

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No conflict of interest.

3PC-041

AUTOMATION OF PARENTERAL NUTRITION COMPOUNDING: RESULTS OF GRAVIMETRIC QUALITY CONTROL BEFORE AND AFTER ITS IMPLEMENTATION

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Background The equipment for automated compounding systems (ACS) for parenteral nutritional (PN) admixtures are increasingly being used. Gravimetric control is a quality assurance test used in the preparation of nutritional admixtures. The international guidelines recommend this control to the final product and stated that the variation should be within 5%, ensuring an appropriate accuracy and safety of these parenteral solutions. However, a 3% variation is recommended, mainly for paediatric parenteral nutrition.

Purpose Impact evaluation of the ACS implementation on the quality of compounding parenteral nutrition solutions. Testing the possibility of reducing the acceptable variation limit from 5%–3%.

Material and methods Statistical evaluation of the gravimetric quality control results of PN admixtures before (manual method and semi-automated method) and after ACS implementation.

Three samples of 580 PN admixtures for each specified compounding method were used.

Results Manual method mean deviation: –0.78%, SD: 0.91%, PN admixtures with error >3%: 14; semi-automated method mean deviation: –0.20%, SD: 1.44%, PN admixtures with error >3%: 32; and automated method mean deviation: –0.10%, SD: 0.39%, PN admixtures with error >3%: 0. With the automated system, all the PN admixtures were obtained with an error lower than 3%.

Conclusion The automated compounding method was related to the lower mean for the theoretical weight deviation, as well as lower SD, which indicates a lower error percentage but also a lower dispersion of the results for this method. Thus, the implementation of ACS improved the accuracy of results for the gravimetric control of the PN admixtures, reducing to zero the number of solutions that exceed the acceptable range, thus increasing the safety of the admixtures produced and, consequently, the safety of the patient.

The number of PN admixtures that exceeded the 3% margin, recommended for paediatric nutrition, was zero, so we concluded that we could reduce our test specification to 3%.

REFERENCES AND/OR ACKNOWLEDGEMENTS

No conflict of interest.