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THE ADVANTAGE OF AUTOMATION IN THE PREPARATION OF CHEMOTERAPY DRUGS FOR THE INTERCEPTION OF ERRORS

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Background

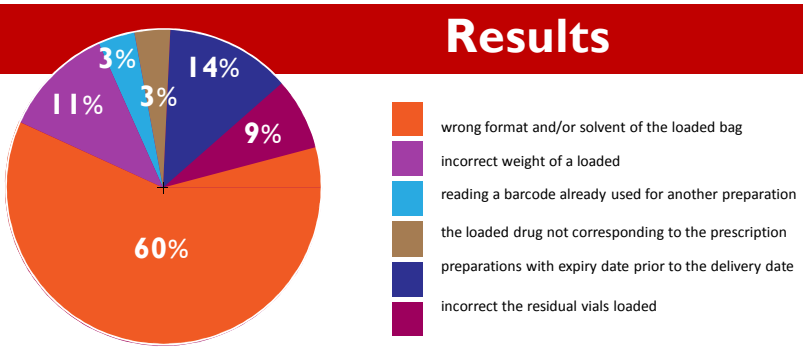
The preparation of antiblastic chemotherapy drugs is an activity of high clinical risk because an error in the preparation phase can result in severe damage to the patient. The robotic system APOTECAchemo has been in use in our center since 2014. The system is not only able to intercept potential errors in the stage of preparation of therapies but also equipped with software that records any potential errors to ensure continuous monitoring inside the antiblastic medication unit.

In order to improve the production process by getting the attention of the operators that work in the antiblastic medication unit every day, we carried out an analysis of the errors that represent the potential critical points in the preparation phase.

Material & Methods

We analyzed the medication errors intercepted by the robots in the period between November 2016 and May 2017. The software APOTECAm@a for the real-time monitoring of the performance records and reports all the stopped errors thanks to controls at different levels: expiry date control of the drugs, load of the right components in through barcode reading, components weight control, drug label identification.

Results



Device	Events	Avoided errors
Amanager	10	Preparations with expiry date prior to the delivery date
Achemo	6	Incorrect the residual vials loaded
Achemo	42	Wrong format and/or solvent of the loaded bag
Achemo	8	Incorrect weight of a loaded component
Achemo	2	Mistake devices
Achemo	2	The loaded drug not corresponding to the prescription

The robotic system intercepted a total of 70 errors on 3090 preparations, which could have been dispatched if the equipment had not been computerized and robotized. Six types of errors were identified: preparations with expiry date prior to the delivery date (14%), incorrect the residual vials loaded (9%); wrong format and/or solvent of the loaded bag (60%); incorrect weight of a loaded component (erroneous loading of residue vials/incorrect filling of infusion pump) (11%); mistake devices (3%); the loaded drug not corresponding to the prescription (3%).

Conclusion

The study showed that the incidence of medication errors associated with human distraction is 2,3%. The picking of a wrong bag format and the expiry date of medication prior to infusion date are the most common mistakes.

Despite intercepting and avoiding human errors, robotics allows real-time monitoring of different key performance indicators, like intercepted medication errors, which guarantees the continuous improvement of the production process.

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