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ELECTRONIC PRESCRIBING IN THE NEONATAL INTENSIVE CARE UNIT: ANALYSIS OF PRESCRIBING ERRORS AND RISK FACTORS

Canales Siguero MD, García Muñoz C, Caro Teller JM, Martínez de la Torre F, Jimenez Leon MC, Piris Borregas S, Ferrari Piquero JM, Pallás Alonso CR, Moral Pumarega MT

Background and Importance

Patients admitted to Neonatal Intensive Care Units (NICU) are up to eight times more at risk of medication errors than patients admitted to adult Intensive Care Units. Prescribing errors account for up to 74% of medication errors. The implementation of electronic prescribing has been postulated as a useful tool to reduce prescription errors.

Aim and Objectives

To analyse the most prevalent prescribing errors with the e-prescribing system and to analyse risk factors.

Material and Methods

All patients born during the study period who were admitted to the NICU for at least 24 hours and with active pharmacological treatment were included in the study. The prescriptions were made in the IntelliSpace Critical Care and Anaesthesia (ICCA®) electronic assisted prescription software integrated in the medical record for the critically ill patient. Treatment review was performed by a pharmacist on a daily basis and errors were graded according to the taxonomic criteria of the National Coordinating Council for Medication Error Reporting and Prevention.

Results

N = 240

Sept 2021 – June 2022

13876 prescriptions were reviewed- 455 errors were found

Female sex (number and percentage)	104, 43,3%
Median birth weight (kg)	2 (1,29 – 3,05)
Median gestational age at birth (weeks)	34 (30 – 39)
Patient characteristics (number and percentage)	
Prematurity <32 weeks and/or low birth weight <1500g	77, 32,1%
Prematurity >32 weeks/Low birthweight 1500 – 2000g	49, 20,4%
Heart disease	44, 18,3%
Others	87, 29,2%
Median length of stay (days)	7 (3,5 - 17)
Re-admissions	11, 4,6%

TOP 5

Drugs with the most errors were:

Lactobacillus acidofillus (n=45,9.89%)
caffeine citrate (n=40,8.79%)
paracetamol (n=35,7.69%)
gentamicin (n=25,5.49%)
cholecalciferol (n=16,3.52%)

Route of administration

enteral administration accounted for more than half of the errors (n=308, 67.69%)

Risk factors

- Patients with a birth weight between 1000-1500 grams were 82% more likely to have an error than those with extremely low birth weight (<1000g) (OR=1.81,CI95% 1.42-2.89,p<0.05).
- When occupancy is greater than 85% vs. less than 70%, there is a 2.16 times greater risk of a patient having a prescribing error (OR=2.16 CI95% 1.23 -3.80 p<0.05).

Conclusion

Prescribing errors were more frequent in very low birth weight and very preterm patients. It is important to know which drugs are more susceptible to e-prescribing errors and in which type of patients in order to implement additional safety measures.