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INSULIN PERFUSION IN NEONATOLOGY. WHICH ONE IS THE SAFEST?M. AGUAR CARRASCOSA¹, Á. SOLAZ GARCÍA¹, I. LARA CANTÓN¹, A.A. GARCIA ROBLES², A. CRUZ SÁNCHEZ², J.L. POVEDA ANDRÉS², A. PINILLA GONZÁLEZ¹, Á. SÁNCHEZ ILLANA¹.

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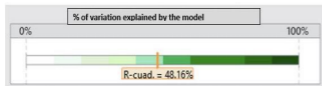
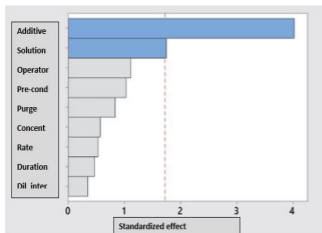
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BACKGROUND AND IMPORTANCE: insulin presents problems of adsorption to plastic that is intensified with the low insulin concentrations and infusion rhythms used in neonates conditioning the decrease of the doses actually administrated. There is no consensus on the appropriate insulin preparation and administration.

AIM AND OBJECTIVES: to determine the combination of variables for the preparation and administration of insulin infusions that provides higher accuracy and lower probability of error.

MATERIALS AND METHODS: experimental study to determinate which variable most influences the concentration and dose of insulin administrated. 24 experimental infusions were made, using combinations of different variables: additive (albumin yes/no), solvent (NaCl 0.9%/D5%) operator (1/2), pre-conditioning (yes/no), purge (yes/no), concentration (0.05-0.1 UI/mL), infusion rate (0.3-0.7mL/h) and infusion duration (1h/24h).

- **Determinations:** IMMULITE 1000 Immunoassay System equipment
- **Screening model** developed to calculate insulin recovery
- **Analysis** to determinate the variable with the most influence



RESULTS: after analysing the total of the samples, each of the recovery values obtained were entered in the screening model. The variables that achieved higher insulin recovery values were the additive (albumin yes) and the solution (NaCl 0.9%).

The model can explain 48.16% of the variation in insulin recovery, in which the additive has a standardized effect 4-times greater and the solution 2-times greater than the rest of the variables that do not exceed 1.

Figure. Pareto diagram.

CONCLUSION AND RELEVANCE: the additive and the solvent seem to be the most determining factors for the recovery of insulin in the preparation of the infusions. The addition of albumin and preparing the infusions with sodium chloride solution 0.9% as solution results in a greater recovery of insulin.