Retrospective analysis of discrepancies between 3971 prescriptions for paediatric parenteral nutrition mixtures and two commercial bag compositions.

M. Royer [1], A. Léké [2], F. Marçon [1]
[1] Service de pharmacie, [2] Service de soins intensifs de néonatalogie, CHU Amiens Picardie

1 — Why this study?

Check that no satisfactory commercial alternative is available (Code de la santé publique)

That is, check :

- whether the prescriptions for individualised parenteral nutrition (IPN) are different from the commercial mixtures referenced in our university hospital (Pédiaven® NN1 and NN2)
- and if so, which nutrients are different

2 — How is it constructed?

Pop: Retrospective analysis of NPI manufacturing orders over 2021 for two paediatric services

A) — Measurement of the difference between the concentrations prescribed and those of the commercial bags (Pédiaven® NN1 and NN2)

$$d = \sqrt{\sum_i (C_p^i - C_s^i)^2}$$

Euclidean distance for all nutrients 'i' between prescribed concentrations « C_p^i » and concentrations in commercial mixtures « C_s^i »

B) — Analysis of the discrepancies between the prescription and the industrial bag for each nutrient.

If the difference > 0, the nutrient is underdosed in the industrial bag compared to the prescription

3 —What are the results?

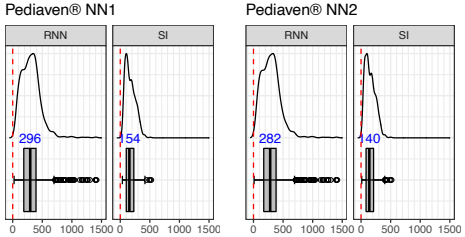
Pop

NPI prescriptions 2021

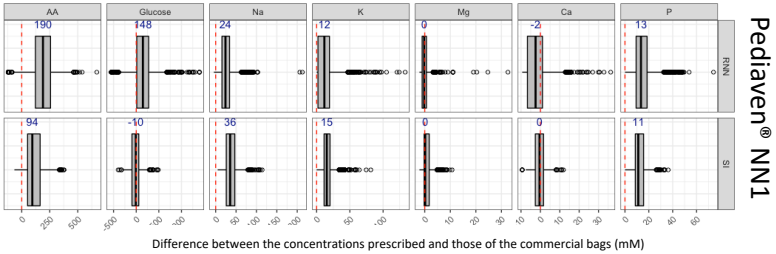
— 2495 prescriptions made in paediatric resuscitation unit

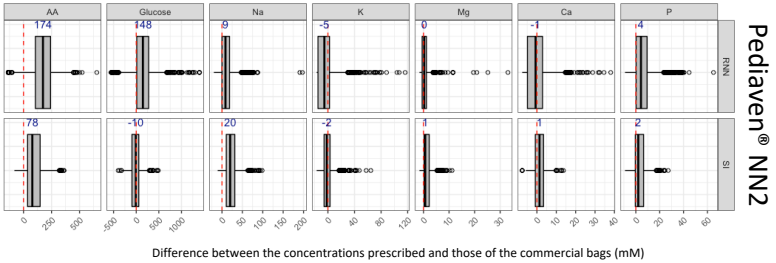
— 1476 prescriptions made in paediatric intensive care

A



B





4 — Take back home message

For this patient population :

— The commercial bags referenced have **lower amino acid and phosphorus** intakes than the prescribed **NPI**

- Contrary to the **NPI** prescriptions, these commercial bags are based on the old ESPGHAN recommendations[1].

— **NPI** also allows nutrients to be **concentrated to meet the water intake** constraints of the preterm newborn. This may explain the discrepancies observed for **glucose** in NICs.

[1] MIHATSCH, W. A. et al. (2018). Espghan/espen/espr/cspen Guidelines on Pediatric Parenteral Nutrition. Clinical Nutrition, 37(6), 2303-2305.