DEVELOPMENT AND EVALUATION OF A COMPUTERIZED PROGRAM FOR A ONE-STEP PRESCRIBING AND COMPOUNDING OF PAEDIATRIC PARENTERAL NUTRITION

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RATIONALE

Computerized ordering programs of parenteral nutrition reduce errors (e.g. calculation) and adverse events (e.g. calcium-phosphate precipitation), improve prescription’s quality (e.g. by optimising the energy load), and decrease workload for the prescribers and the pharmacists.

Most of the time, computerized programs do not integrate the compounding and labels’ edition steps.

We developed a user-friendly program (“Nutrilogic”), for one-step prescribing and compounding of paediatric parenteral nutrition.

RESULTS

- Nutrilogic is accessible online since 2003 from all HUG’s paediatric wards.
- Ordering is performed in a logical way using patients’ clinical data (enteral nutrition, amount of volume, energy, glucose, Na⁺ and K⁺ already administered with IV fluids and drugs).
- Limits for each nutrient, calcium-phosphate precipitation curves, and others useful functions (e.g. possibility to select a ready-to-use all-in-one TPN for children > 35 kg) are integrated in the program.
- Alerts for physical or chemical incompatibilities are built in the program at the physician step to reduce unnecessary calls for clarification.
- Prescriber’s guide is integrated in the program.
- Nutrilogic reduces significantly the risks compared to former manual compounding method, mainly by suppression of transcription errors and readability problems.

CONCLUSIONS

By its high educational value and its one step approach from prescription to compounding, the user-friendly program Nutrilogic improves the quality and security of paediatric parenteral nutrition by reducing prescription errors and compounding risks.

METHOD

Nutrilogic, developed on Access®, provides:
- high educational environment for the prescription
- direct prescription’s recording on a server
- creation of a file used to pilot a BAXA® MM 12 automatic compounder
- automatic printing of the labels
- complete traceability of each nutrition bag is assured

Safety improvement of the process induced by the program was evaluated using a structured risk analysis method.

References


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