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Structured Algorithm for Error Reduction in Chemotherapy Administration
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Introduction
• Chemotherapy errors remain the major cause of iatrogenic patient morbidity in hospitals (Gilbar, 2001; Heldt et al., 2001)
• Major risk factor for errors - unstandardized administration in the following areas:
  - Ordering
  - Dispensing
  - Administration
  - Monitoring
• Another risk factor: failure to identify necessary staff skills/aptitude required to prevent errors

Purpose
To develop a structured algorithm based upon good evidence that might be used by nurses at a cancer center along with efforts to decrease chemotherapy medication errors

Significance
Use of the developed algorithm may lead to development of evidence-based strategies to decrease errors in chemotherapy administration in cancer patients

Methods
Comprehensive review of literature
• Data bases: Science Direct, CINAHL, Pub Med, MEDLINE, Expanded Academics.
• Search limits: publication last 10 years, peer reviewed journals, English.
• Primary key words: "chemotherapy process," "medication error," "error prevention," "error rate," "protocol violation."

Final articles addressed error reduction and standardized verification of treatment/dosing.

Data sources: books, articles, abstracts from scientific conferences.

Findings
Chemotherapy error reduction may be achievable through use of evidence based strategies such as:
• Standardizing medication delivery through procedures/protocols
• Integration of information systems elements such as:
  - Computer Prescribing Order Entry,
  - Bar-coded medication administration,
  - Electronic medication administration records,
  - Automated dispensing machines
  - IV Pump Guardrails
• Standardized Ordering Forms
• Infusion-related Hypersensitivity Reaction Information
• Adverse Reaction guidelines
• Extravasation Management Protocols
• Verification Grids
• Standardized Patient Identifiers

Implications for practice
Standardized protocols for medication administration, information systems strategies, and a variety of other techniques aimed at specific points in the error process may reduce error rates and assist in improved outcomes related to medication safety, in particular, chemotherapy administration.

Recommendations
The utilization of this algorithm should be tested in clinical practice to determine the effect on chemotherapy error rates.

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