



## Knowledge and practice among Hong Kong oncology nurses in the management of chemotherapy-induced nausea and vomiting

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### ABSTRACT

#### Keywords:

Chemotherapy

Nausea

Vomiting

Nurses' roles

Educational needs

Cancer

*Purpose:* To examine nurses' roles in the prevention and management of chemotherapy-induced nausea and vomiting (CINV), and to identify their related educational needs.

*Methods:* This was a descriptive cross-sectional study with a self-reported survey completed by 103 oncology nurses caring for and administering chemotherapy to cancer patients in the department of oncology in three Hong Kong public hospitals. The survey was developed to identify key issues pertinent to the role of nurses in managing CINV. Data were collected from the following areas (a) demographics, (b) assessment of CINV, (c) CINV management and (d) barriers and facilitators to good CINV practice.

*Results:* Only a third of respondents performed a CINV assessment before starting chemotherapy, and more than 40% reported that the use of a standardised assessment tool was uncommon. Nearly half recognised that they had inadequate knowledge of different aspects of CINV, but the majority could clearly state the most common pharmacological agents used to treat chemotherapy-induced nausea (88.3%) and vomiting (87.4%). The barriers respondents most frequently encountered in CINV prevention and management were lack of time and a heavy workload. Adopting a standardised CINV assessment tool and management protocol together with further professional training were identified as the major facilitators in improving CINV prevention and management.

*Conclusions:* Respondents perceived their knowledge of CINV prevention and management as inadequate. There is a need to adopt a standardised assessment tool, to develop a management protocol and to introduce further professional training to meet the expanding needs of both patients and nurses.

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### Introduction

Chemotherapy-induced nausea and vomiting (CINV) is one of the common and distressing side-effects experienced by patients during cancer treatment. In conjunction with anti-emetic treatment, 32.6–59.2% of patients receiving moderate emetogenic chemotherapy (MEC) and 35.3–66.0% undergoing high emetogenic chemotherapy (HEC) still reported acute and delayed CINV (Grunberg et al., 2004; Haiderali et al., 2011; Liau et al., 2005;

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Molassiotis et al., 2008; Valle et al., 2006). Williams et al. (2010) examined symptom monitoring and self-care strategies among 222 Chinese patients undergoing cancer treatment. Of the 14 therapy-related symptoms reported by patients after at least two weeks' chemotherapy, nausea and vomiting were reported by more than 50%, more than those in radiotherapy alone or a combination of chemotherapy and radiotherapy. Also nausea was one of the most severe symptoms perceived by patients undergoing chemotherapy alone or combined chemotherapy and radiation therapy (Williams et al., 2010). Similar results were reported by 70 patients undergoing chemotherapy for ovarian cancer – nausea and vomiting were considered to be the most severe side-effects (Sun et al., 2005).

In fact, cancer patients had an aversion to CINV not only during chemotherapy, but also after treatment. Hilarius et al. (2012)

conducted a study to examine the incidence of CINV among 277 patients undergoing chemotherapy, and their findings showed that 39% and 68% of the participants experienced acute and delayed nausea during the first cycle of treatment, although the incidence of acute and delayed vomiting was 12% and 23% respectively. Of those reporting CINV, one third indicated that the symptoms had an adverse effect on their daily life. Similar findings were reported by Bloechl-Daum et al. (2006), in a study which aimed to examine the effects of CINV on daily life among 298 cancer patients before and after chemotherapy.

Despite evidence that effective anti-emetics and non-pharmaceutical management can reduce the incidence of CINV, the clinical problem still exists (Bender et al., 2002; Hawkins and Grunberg, 2009). Major possible reasons are that symptoms are under-reported by patients and under-documented by healthcare professionals, or that implementation of symptom management strategies is not complying with the anti-emetic guidelines (Bender et al., 2002). Effective communication in relation to the symptoms can help managing them promptly, with positive outcomes. Studies have found that patient outcomes are improved when nurses take a central role in implementing effective CINV management (Aranda et al., 2012; Braud et al., 2003; Lee et al., 2001). Patients consider a nurse's assessment in chemotherapy-induced symptoms to be desirable when it has an impact on their care, with appropriate modifications being made accordingly (Braud et al., 2003). However, studies examining the role of nurses in the prevention and management of CINV have been limited. To improve healthcare services and the quality of life of cancer patients receiving chemotherapy, we need to investigate nurses' roles in CINV prevention and management, and their related educational needs – the principal aims of the present study.

In pursuit of these aims, our key research questions were:

1. How do nurses assess CINV risk?
2. How do nurses currently practise CINV management?
3. What facilitators and barriers do nurses encounter in the prevention and management of CINV?
4. What educational needs do nurses have in seeking to improve prevention and management of CINV?

## Methods

### *Sample and setting*

A descriptive cross-sectional design was chosen. The data were collected in the department of clinical oncology of three public hospitals in Hong Kong, where all registered or enrolled nurses working in that department at the time of the survey and administering chemotherapy to cancer patients were invited to participate in the study.

### *Measurements*

The survey instrument was developed after a comprehensive review of the literature to identify key issues pertinent to the role of nurses in managing CINV. In this paper, data collected from the following areas were used for analysis: (a) demographics, (b) assessment of CINV (7 items; e.g., frequency of taking the role of assessment, use of standardized assessment tool, and type of guidelines used for CINV assessment) (c) CINV management (9 items; e.g., chemotherapy administration route, type of guidelines in guiding CINV management, pharmacological and non-pharmacological management in CINV) (d) barriers and facilitators to good CINV practice (2 open-ended questions). The survey

was reviewed by the research team for clarity, consistency of terms, response categories and ratings, and to reduce the number of items where possible.

Nine expert chemotherapy nurses attending a cancer nursing conference (Cancer Nurses' Society of Australia Winter Congress, 2009) were invited to participate in a focus group to review the survey's relevance, clarity, comprehensiveness and ease of completion. Minimal changes were made to enhance the clarity of the survey following this expert review. As all eligible subjects in Hong Kong are fluent in English and usually deal with chemotherapeutic agents whose instructions are printed in English, this was the language used for the survey. Three clinical nurse specialists or managers were invited to review the English version of the survey to ensure its clarity.

### *Data collection*

The head nurse, who was not a research team member, approached and distributed an information sheet and informed consent notice to all eligible subjects. Those interested in participating in the study were asked to sign the consent form, then fill in the questionnaire and return it to the head nurse by the deadline given on the information sheet. Participation in the study was voluntary and participants had the right to withdraw at any time without penalty. Confidentiality was also assured. The hospital ethical committee approved the study.

### *Data analysis*

The Statistical Package for the Social Sciences (SPSS) version 14.0 was used to analyse the data, and descriptive statistics were applied to the research questions.

## Results

### *Recruitment and response*

A total of 167 questionnaires were distributed and 103 were returned, a response rate of 61.7%.

### *Respondents' characteristics*

A total of 103 nurses completed the questionnaire. All were working in the public health sector, with over two-thirds (69.9%) in hospital in-patient units. Their years of experience in the nursing profession ranged from less than one to over 20 and so they held different positions, but were mainly staff nurses working on the front line (73.8%). Most (79.6%) had more than two years' experience of caring for patients receiving chemotherapy. The majority (80.6%) had attained the educational level of a bachelor's degree or above, and had received in-service training (80.6%) in nursing care for chemotherapy patients. However, only about a third had received formal training in oncology nursing (35.0%) or chemotherapy (38.8%) respectively.

### *Assessment of CINV risk*

Nearly half of the respondents (48.1%) perceived that CINV assessment in their workplace was mainly guided by the clinician's knowledge and experience, through observation and asking patients about their feelings directly. The use of a standardised assessment tool was uncommon (42.6%). Although most respondents (41.4%) believed that their assessment could distinguish between nausea and vomiting, a considerable number (35.7%) remained uncertain. The findings showed that some of the

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