CHEMOTHERAPY INDUCED NAUSEA AND VOMITING ON QUALITY OF LIFE AMONG CANCER PATIENTS: A REVIEW

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Abstract

Background: Quality of life (QoL) has become a major outcome in the treatment of patients with cancer. This study is aimed at examining the impact of chemotherapy-induced nausea and vomiting on QoL of patients among cancer patients.

Methodology: A systematic search of the literature published between 2006 and 2012 was undertaken to identify research available on chemotherapy induced nausea and vomiting and quality of life. The mixed methods review was conducted using critique quantitative studies prospective.

Result: It is commonly claimed that the nausea and vomiting accompanying cytotoxic chemotherapy have a negative impact on quality of life. While this may seem self-evident, there is little empirical data demonstrating that the failure to control chemotherapy nausea and vomiting affects aspects of quality of life other than directly related physical symptoms.

Conclusion: Even if the number of the published studies specifically aiming to evaluate the impact of chemotherapy-induced nausea and vomiting (CINV) on Quality of life (QL) can be considered high, those showing results that are reliable and helpful to orient the clinical decision are few. Also considering the improvement in antiemetic therapy obtained in the last few years, and the more frequent implementation of reliable antiemetic guidelines, as well as the recent increasing diffusion of lower emetogenic chemotherapies, more research should be performed to obtain results on the impact of CINV on QL useful to orient the choice of antiemetic therapy.

Key words: chemotherapy, quality of life, leukemia, nausea and vomiting

Introduction and Background

Chemotherapy is considered the first drug of choice of physicians to treat cancer patients; between 500,000 and 1 million Americans receive chemotherapy each year. Nausea and vomiting affects 70 to 80 percent of people who receive chemotherapy and can result in significant morbidity (Rudolph. Navari, 2007). First of all the classification of nausea and vomiting in patients receiving chemotherapy could be acute: i.e. occurring within 24 hours of chemotherapy; delayed, occurring between 24 hours and 5 days after treatment; breakthrough, occurring despite prophylactic treatment; anticipatory, occurring before chemotherapy treatment; and refractory, occurring during subsequent cycles when antiemetics have failed in earlier cycles; this effect varies from one patient to another according to chemotherapy type, doses, route and patient experience.

Nausea and vomiting, is considered a large and serious problem affecting patients who receive chemotherapy and affects their quality of life. This needs more focus on the problem and the method to prevent or decrease chemotherapy induced nausea and vomiting (CINV) to improve patient quality of life (QOL).

The main purpose of this review is to analyze the impact of chemotherapy induced nausea and vomiting on quality of life among patients with leukemia.

Methodology

To critically examine the effect of chemotherapy induced nausea and vomiting on quality of life among leukemia patients, a comprehensive literature review was conducted using the electronic databases of nursing, Ovid, Science Direct, the Cumulative Index to Nursing and Allied Health Literature “CINAHL “and Pubmed for articles published

between 2006 and 2012. The intention was to review all full publications that have been appearing in English language.

Biomedical journals were used to search the electronic databases using keywords: nausea and vomiting, quality of life, leukemia, chemotherapy. Key words were used in multiple combinations to conduct an extensive search of these databases. Computerized listings from nursing Ovid, Science Direct, CINAHL and Pubmed contained, a total of 42 articles that were identified and after exclusion of duplicates, the review utilized 8 articles which met the inclusion criteria.

Article inclusion criteria for the integrative research review were the following:

1. It is a research-based study.
2. It included a population of patient cancer more than 18 years.
3. It investigated chemotherapy induced nausea and vomiting.
4. It is written in the English language.
5. Is published in the last 6 years.

Based on the inclusion criteria, a total of 8 articles published from 2006 to 2012 were selected and formed the basis for this review. The earliest study included was published in 2006, with most studies published from 2011 through to 2012. Most articles were published in nursing journals.

Countries within which the studies for this review were conducted, include the United States, Spain, Indonesia, Germany, and England.

Methodological Characteristics:

The eight studies composing this integrative research review were quantitative studies. All of them were prospective. A wide variety of instruments were used to measure concepts of chemotherapy induced nausea and vomiting. The sample size in the 8 research studies ranged from 43 to 298, either male or female, in leukemia cancer; three studies were conducted in the United State and two studies conducted in Spain , and one each in Germany, Indonesia, and England.

This literature review was guided by Symptom Management Theory which was developed by Pat Larson in 1994.

Analysis of the literature findings

This section presents the review of related articles of studies related to chemotherapy induced nausea and vomiting and quality of life among cancer patients.

(Perwitasari et al) in his study about the quality of life with a sample of 179 cancer patients, using the EORTC quality of life questionnaire (QLQ-C30) and The Short Form (36) Health Survey (SF-36) tools for assessment of nausea and vomiting, and administered immediately before and on day 5 after chemotherapy administration. Patients record nausea and vomiting over 5 days after chemotherapy and the result findings show most (74.9%) of the patients experienced delayed emesis during the 5 days after chemotherapy despite the prophylactic use of antiemetics which caused significant negative impact on patients' QoL.

Another study by Bloechl-Daum et al about the effect of delayed nausea and vomiting on quality of life was conducted in 14 medical practices on cancer patients in the United States with a sample of 298 patients. Patients completed the Functional Living Index-Emesis (FLIE) questionnaire at baseline and on day six. Results found nausea had a stronger negative impact on patients' daily lives than vomiting.

Jordan et al in his study to assess whether prechemotherapy quality of life factors and found certain coping strategies are associated with post chemotherapy nausea and vomiting (PCNV). A total of 43 chemotherapy patients were enrolled in this study. (QoL) parameters were measured by a modified EORTC Quality of Life Questionnaire (QLQ-30), more than half of patients receiving antiemetics still experienced (PCNV) in this study and this affects QOL for these patients.

Ortega et al, using Data for 160 patients from nine university hospitals, found most of the participants (70 %) were women with a mean age of 50 years. Despite the use of antiemetic prophylaxis, patients experienced significant nausea and vomiting during chemotherapy (31 %).

Bloechl-Daum et al in his finding of the results that patients were assessable, delayed vomiting was reported by 32.5% and delayed nausea by 54.3%.

Carole Farrell et al, used a prospective observational study over two cycles of chemotherapy. Patients completed the Multinational Association of Supportive Care in Cancer Antiemesis Tool, a measure of nutritional status, the Functional Assessment of Cancer Therapy-General (FACT-G) quality of life scale and the Hospital Anxiety and Depression Scale at the end of each chemotherapy cycle. The sample consisted of 104 patients, primarily female, receiving anthracycline-based chemotherapy. High levels of nausea were observed (55.2-72.9 %), and severe nausea was reported by 20.5-29.2 % of the participants. Chemotherapy-induced nausea has an impact on nutritional status and physical functioning and can impair anxiety and quality of life.

Jiménezet.al evaluated the incidence and severity of chemotherapy-induced nausea and vomiting (CINV) in oncohematology in routine clinical practice, and its impact on quality of life, with the study including: acute myeloid leukemia and stem cell transplant recipients. One hundred consecutive transplant and 77 acute myeloid leukemia patients were studied. Among patients with emesis, the mean percentage of days with emesis and the mean total

number of emetic episodes were 61% and 9.4 (transplant recipients), and 53.6% and 6.2 (leukemia patients), respectively. CINV control was lower in the delayed than in the acute phase.

Cohen et.al study participants recorded occurrence of CINV by completing a daily diary each day for the first 8 days after treatment during each cycle and the Functional Living Index-Emesis (FLIE) before chemotherapy, at the end of day 1 and day 6 after chemotherapy. Mixed model regression analysis was used to explore the association between occurrence of and its impact on patient QOL and he found occurrence of CINV significantly interfered with patient QOL as assessed by the FLIE.

Enzo Ballatori et al, assessed adult cancer patients who were receiving cisplatin-containing regimens and reported incidence and intensity of CINV for eight consecutive days in a diary and completed a Functional Living Index for Emesis (FLIE) questionnaire.

Conclusion and Recommendation

Although the fact that the effect of CINV on QOL has a short-term effect, its evaluation is useful for clinical decisions concerning the choice of appropriate antiemetic prophylaxis. Only the result of an antiemetic randomized clinical trial can help to reach this goal. Because of the subjectivity of patient's answers, only a double-blind study can be assured to provide reliable results.

Finally, the correct choice of the antiemetic treatments can lead to useful results to improve quality of life. In fact, if new antiemetic prophylaxis were compared to a treatment different from the standard therapy, no information about the differences between the mean scores of the new treatment and standard therapy would be available. The above mentioned difference can lead only to less efficacy of the used comparison with regards to the standard antiemetic therapy. For the same reasons any comparison involving optimal antiemetic regimens could be regarded as useless for a specific clinical decision. Unfortunately not one of the of eight comparative studies identified in our review was randomized and double-blind. Therefore, only the results of two studies can be regarded as helpful for orienting the choice of an antiemetic prophylaxis.

Summarizing the results obtained from the review show that the antiemetic prophylaxis, allowing better control for nausea and vomiting during the first day of chemotherapy, also lead to an improvement in the patients QOL. Among the 8 comparative studies, heterogeneity of instruments aimed at evaluating QOL was detected: in 3 studies FLIE tools, in 3 the EORTC QLQ-C30, and in 2 (FACT-G) tools. The reasons for the choice of the instrument to use to assess the influence of emesis on QOL are clearly described by Jordan et al.

In conclusion, even if the number of the published studies specifically aimed to evaluate the impact of the chemotherapy-induced emesis on QOL are considered high, those showing results that are reliable and helpful to orient clinical practice are few. Also considering the improvement in antiemetic guidelines, therapy obtained in the last years, and the more frequent implementation of reliable antiemetic guidelines, as well as the recent increasing diffusion of lower emetogenic chemotherapy has improved the situation. Despite the existing literature, several gaps were found in the nurses' understanding of the impact of CINV on QOL. How do nurses effectively improve the QOL after administering chemotherapy? When is the appropriate time for nurses to intervene to decrease the impact of CINV on the QOL. In order to fill the gap in the nurse's body of knowledge, a scientific systematic approach is needed to test nursing interventions that are suitable to improve QOL, in order to achieve that. Further studies are needed to achieve a better understanding about the QOL in patients who suffer from CINV.

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