



CODEN [USA]: IAJPBB

ISSN: 2349-7750

**INDO AMERICAN JOURNAL OF  
PHARMACEUTICAL SCIENCES**<http://doi.org/10.5281/zenodo.997171>Available online at: <http://www.iajps.com>

Review Article

**NAUSEA AND VOMITING CAUSED BY CHEMOTHERAPY IN  
PATIENTS WITH BREAST CANCER- A REVIEW****Fateme parooei, Sara Zamanpour and Morteza Salarzaei**Medical student, Student Research Committee, Zabol University of Medical Sciences,  
Zabol, Iran**Abstract:**

**Introduction:** According to published statistics by the World Health Organization in 2011, cancer is the second leading cause of death after cardiovascular diseases throughout the world. The American Cancer Society announced in its latest report that out of every eight women, one is diagnosed with breast cancer.

**Methods:** In this review article, the databases Medline, Cochrane, Science Direct, and Google Scholar were thoroughly searched to identify Nausea and Vomiting Caused by Chemotherapy in Patients with Breast Cancer. In this review, the papers published until early January 2017 that were conducted to study the Nausea and Vomiting Caused by Chemotherapy in Patients with Breast Cancer were selected.

**Results:** Chemotherapy alongside radiotherapy and surgery is one of the oldest and most commonly used methods for treating breast cancer. Chemotherapy is employing anti-neoplast agents attempting to destroy tumor cells by interfering with cellular functions and their reproduction.

**Discussion and conclusion:** Since nausea is a mental symptom, the patient himself is the best person who could provide the health team with precious and precise information about the presence and severity of the symptoms.

**Key words:** Nausea, Chemotherapy, Breast Cancer

**Corresponding author:****Morteza Salarzaei,**

Medical student,

Student Research Committee,

Zabol University of Medical Sciences,

Zabol, Iran

Email: [mr.mortezasalar@gmail.com](mailto:mr.mortezasalar@gmail.com)

Tell : +989120644917

QR code



Please cite this article in press as Morteza Salarzaei et al, *Nausea and Vomiting Caused by Chemotherapy in Patients with Breast Cancer- A Review*, Indo Am. J. P. Sci, 2017; 4(09).

**INTRODUCTION:**

According to published statistics by the World Health Organization in 2011, cancer is the second leading cause of death after cardiovascular diseases throughout the world. The American Cancer Society announced in its latest report that out of every eight women, one is diagnosed with breast cancer [1]. The rate of cancer in developed countries is increasing from 1 to 0.2% and in developing countries about 0.5% annually. According to a report by the World Health Organization in 2011, cancer in Iran was reported to be 12% widespread and was recognized as the third most common cause of death [2]. Gastric cancer, breast cancer, and colorectal cancer are the three common cancers in Iran respectively. Breast cancer is the first place cancer widespread among women [3]. The average age of breast cancer diagnosis in the Western countries is 56 years and in Iran 45 years. New developments in the patients care with breast cancer have increased the overall survival rate of the patients in recent years. This increase in survival has doubled the importance of predictive factors of local recurrence and distant metastases of the disease [4]. In addition, it should be noted that the progression or regression of some diseases are not constant over time, as in the stages of recovery or worsening of the disease, the occurrence of some consequences changes the course of the disease, and the disease progress declines and this risk begins to decrease in the 2-5 years after treatment, which make the recovery process speed [5].

**METHODS:**

In this review article, the databases Medline, Cochrane, Science Direct, and Google Scholar were thoroughly searched to identify Nausea and Vomiting Caused by Chemotherapy in Patients with Breast Cancer. In this review, the papers published until early January 2017 that were conducted to study the Nausea and Vomiting Caused by Chemotherapy in Patients with Breast Cancer were selected.

**FINDINGS:**

Chemotherapy alongside radiotherapy and surgery is one of the oldest and most commonly used methods for treating breast cancer. Chemotherapy is employing anti-neoplast agents attempting to destroy tumor cells by interfering with cellular functions and their reproduction [6]. This treatment, due to its systematic nature, causes various complications, including diarrhea, low blood pressure, drowsiness, extrapyramidal symptoms, constipation, nausea and vomiting. Among these complications, nausea and vomiting are the most common, worst and

troublesome ones experienced by 70-80% of patients, which therefore, the success of this method of treatment has largely been criticized [7]. Recent studies have demonstrated that about 70% of patients undergoing chemotherapy, even with extensive use of anti-nausea and anti-vomiting medicines still continue to experience predicted acute and delayed nausea and vomiting [8]. Predicted nausea and vomiting is a phase which the patient experiences before receiving any chemotherapy drugs. The acute type immediately appears from the time the drug is received up to 24 hours later and the delayed type shows up after 24 hours.

**DISCUSSION AND CONCLUSION:**

Since nausea is a mental symptom, the patient himself is the best person who could provide the health team with precious and precise information about the presence and severity of the symptoms [9]. Therefore, since Likert spectrums, and especially the visual analogue, are applicable in the elderly and children, they could be proper tools for assessing the severity of nausea. The INVR is a tool, which in addition to assessing nausea, could also be applied for the case of vomiting and even gagging [dry vomiting] [10]. Interventions in which the effect of inculcation is probable on the results, it is advisable to consider the placebo group as well in addition to the control group. The significance of the placebo group in determining the inculcation effect cannot be ignored [11]. In these cases, an intervention similar to the actual one is performed to determine whether patients are psychologically reacting to the intervention in a positive manner or not.

**REFERENCES:**

1. Xing Y, Foy M, Cox DD, Kuerer HM, Hunt KK, Cormier JN. Meta-analysis of sentinel lymph node biopsy after preoperative chemotherapy in patients with breast cancer. *British journal of surgery*. 2006 May 1;93[5]:539-46.
2. Berry DA, Cirincione C, Henderson IC, Citron ML, Budman DR, Goldstein LJ, Martino S, Perez EA, Muss HB, Norton L, Hudis C. Estrogen-receptor status and outcomes of modern chemotherapy for patients with node-positive breast cancer. *Jama*. 2006 Apr 12;295[14]:1658-67.
3. Jiralerspong S, Palla SL, Giordano SH, Meric-Bernstam F, Liedtke C, Barnett CM, Hsu L, Hung MC, Hortobagyi GN, Gonzalez-Angulo AM. Metformin and pathologic complete responses to neoadjuvant chemotherapy in diabetic patients with breast cancer. *Journal of clinical oncology*. 2009 Jun 1;27[20]:3297-302.

- 4.Paik S, Tang G, Shak S, Kim C, Baker J, Kim W, Cronin M, Baehner FL, Watson D, Bryant J, Costantino JP. Gene expression and benefit of chemotherapy in women with node-negative, estrogen receptor-positive breast cancer. *Journal of clinical oncology*. 2006 Aug 10;24[23]:3726-34.
- 5.Rouzier R, Perou CM, Symmans WF, Ibrahim N, Cristofanilli M, Anderson K, Hess KR, Stec J, Ayers M, Wagner P, Morandi P. Breast cancer molecular subtypes respond differently to preoperative chemotherapy. *Clinical cancer research*. 2005 Aug 15;11[16]:5678-85.
- 6.Gianni L, Eiermann W, Semiglazov V, Manikhas A, Lluch A, Tjulandin S, Zambetti M, Vazquez F, Byakhov M, Lichinitser M, Climent MA. Neoadjuvant chemotherapy with trastuzumab followed by adjuvant trastuzumab versus neoadjuvant chemotherapy alone, in patients with HER2-positive locally advanced breast cancer [the NOAH trial]: a randomised controlled superiority trial with a parallel HER2-negative cohort. *The Lancet*. 2010 Feb 5;375[9712]:377-84.
- 7.Ragaz J, Olivotto IA, Spinelli JJ, Phillips N, Jackson SM, Wilson KS, Knowling MA, Coppin CM, Weir L, Gelmon K, Le N. Locoregional radiation therapy in patients with high-risk breast cancer receiving adjuvant chemotherapy: 20-year results of the British Columbia randomized trial. *Journal of the National Cancer Institute*. 2005 Jan 19;97[2]:116-26.
- 8.Liedtke C, Mazouni C, Hess KR, André F, Tordai A, Mejia JA, Symmans WF, Gonzalez-Angulo AM, Hennessy B, Green M, Cristofanilli M. Response to neoadjuvant therapy and long-term survival in patients with triple-negative breast cancer. *Journal of clinical oncology*. 2008 Mar 10;26[8]:1275-81.
- 9.Li X, Lewis MT, Huang J, Gutierrez C, Osborne CK, Wu MF, Hilsenbeck SG, Pavlick A, Zhang X, Chamness GC, Wong H. Intrinsic resistance of tumorigenic breast cancer cells to chemotherapy. *Journal of the National Cancer Institute*. 2008 May 7;100[9]:672-9.
- 10.Roché H, Fumoleau P, Spielmann M, Canon JL, Delozier T, Serin D, Symann M, Kerbrat P, Soulié P, Eichler F, Viens P. Sequential adjuvant epirubicin-based and docetaxel chemotherapy for node-positive breast cancer patients: the FNCLCC PACS 01 Trial. *Journal of Clinical Oncology*. 2006 Dec 20;24[36]:5664-71.
- 11.Xenidis N, Ignatiadis M, Apostolaki S, Perraki M, Kalbakis K, Agelaki S, Stathopoulos EN, Chlouverakis G, Lianidou E, Kakolyris S, Georgoulas V. Cytokeratin-19 mRNA-positive circulating tumor cells after adjuvant chemotherapy in patients with early breast cancer. *Journal of Clinical Oncology*. 2009 Mar 30;27[13]:2177-84.