

## Postoperative Outcomes of Breast Cancer Surgery of Iraqi Patients According To a Comparative Study between Harmonic Focus or Monopolar Electrocautery

Dr. Jamal Mohammed Ibrahim<sup>1</sup>, Dr. Sabah Kareem Olewi<sup>2</sup> and Dr. Kamel Younis<sup>3</sup>

<sup>1</sup>M.B.Ch.B. \ F.I.C.S. \ (General Surgeon), Iraqi Ministry of Health, Kirkuk Health Directorate, Azadi Teaching Hospital, Department of Surgery, Kirkuk, Iraq

<sup>2</sup>M.B.Ch.B. \ F.I.C.S. \ (General Surgeon), Iraqi Ministry of Health, Diwaniyah Health Directorate, Diwaniyah Teaching Hospital, Diwaniyah, Iraq

<sup>3</sup>M.B.Ch.B. \ F.I.C.S. \ (General Surgeon), Iraqi Ministry of Health, Kirkuk Health Directorate, Hawija General Hospital, Department of Surgery, Kirkuk, Iraq

**Abstract:** **Introduction:** Breast cancer is considered a chronic degenerative disease, which leads to new knowledge about the root causes in order to combat this disease, and therefore it has been determined that the most important cornerstone in reducing this problem is prevention and early detection, as early detection determines appropriate diagnosis and treatment with High probability of cure but if performed late, curative treatment is unlikely to be offered since women diagnosed at advanced stages, to improve their health and quality of life, are assigned surgical treatment of choice, such as lumpectomy, quadruple resection, resection Simple breast, modified radical mastectomy, and radical mastectomy. **Aim:** This paper aims to study postoperative outcomes of breast cancer surgery of Iraqi patients. **Patients and methods:** In this study, a descriptive cross-sectional study was applied to study the postoperative outcomes of breast cancer surgery of Iraqi patients from 8<sup>th</sup> June 2021 to 5<sup>th</sup> August 2022. Data were collected for 130 patients from different hospitals in Iraq, where the patients were divided into two groups, the first group of patients, which included Harmonic focus surgery, which included 70, and the second group, the Monopolar electrocautery surgery, which included patients which include (60) patients. A statistical study was conducted for patients with osteoporosis using the SPSS program. **Results and Discussion:** Breast cancer is a chronic degenerative disease, and by its nature, it requires that women receive multimodal treatment, such as surgery, to control it, which exposes them to many risks that lead to postoperative complications. Learning to live with breast cancer that won't go away can itself cause some uncertainty, and this was shown by previous studies in Peru; a study conducted at the National Institute of Oncology indicated that 18% of patients with Cancers see the quality of life at a good level, 60% reported a regular level, describing their experience as not very effective in the personal sphere, 22% stated. According to the results, the characteristics of pain, weakness, fatigue, and irritability are noted. Likewise, they have memory problems and perceive that the treatment has affected their social life. **Conclusion:** This study found that Monopolar electrocautery surgery outperformed Harmonic focus surgery in numerous intraoperative and postoperative parameters, including operational duration, blood loss, drain volume, and length of drain placement, in patients who had neoadjuvant CTH before BCS. In contrast, this study demonstrated no significant difference in the incidence of postoperative seroma and associated complications between Harmonic Focus and monopolar electrocautery.

**Keywords:** Breast cancer; Diabetes mellitus; Hypertension; Asthma; and Wound infection.

### INTRODUCTION

Breast cancer is considered a chronic degenerative disease, which leads to new knowledge about the root causes; in order to combat this disease, and therefore it has been determined that the most important cornerstone in reducing this problem is prevention and early detection, as early detection determines appropriate diagnosis and treatment with High probability of cure but if performed late, curative treatment is unlikely to be offered since women diagnosed at advanced stages, to improve their health and quality of life, are assigned surgical treatment of choice, such as lumpectomy, quadruple resection, simple breast resection, modified radical mastectomy, and radical mastectomy [Globocan, 2018]. In addition, node dissection is often performed to prevent and determine whether positive nodes co-exist with metastases as well as in order to tailor adjuvant therapies to eradicate the disease [WHO, 2014]. Therefore, its nature requires women to receive multimodal treatment such as surgery to control it,

which exposes them to many risks that lead to post-operative complications, which include wound infection that can cause dehiscence, and there is also seroma, often caused by ineffective drainage management Pain and hematoma associated with the use of anticoagulants and lymphedema associated with node dissection [Shaikh, K. *et al.*, 2013; Kayani, M.S.B. *et al.*, 2008]. Moreover, the sum of some work-like patterns such as obesity, high blood pressure, and non-adherence to behaviors that reduce risk. Torrealba and Minotta, (2017) highlight that the risk of developing breast cancer increases with age, with the lifetime risk of suffering from it for white women estimated at 13.1% from the moment of birth, and the probability of dying from breast cancer is 3.4% [Jan, W.A. *et al.*, 2006].

Similarly, they supplement that it is most common in women, accounting for 31% of all female tumors. Based on US studies, it has been shown that the death rate due to cancer is declining in

developed countries, to the contrary in low- and middle-income countries (LMICs) (2) [Bokhari, I. *et al.*, 2010]. Up to 1.5% of GDP is lost to cancer in some low- and middle-income regions. The incidence of the disease has large geographical differences and is more common in northern European countries, the United States and Canada, where it is very low in eastern countries such as China, Japan, and Korea, where these differences seem to be due to environmental factors, habits and eating more than ethnic factors. It has been observed that the groups of Orientals who immigrate to the United States after the second generation and who present a situation similar to that of the host country [Kumar, A. *et al.*, 2019]. In recent years, there has been an increase in breast cancer rates in Eastern countries, possibly due to changes in their lifestyles that are more similar to those in the West. Studies recorded in Uruguay indicate that the statistics on global cancer incidence, prevalence, and mortality showed 10,900,000 new cases per year, with 6,700,000 deaths, with 24,700,000 people diagnosed with cancer within three years of diagnosis. The most common is the lung, with 1,350,000 cases, and the breast, with 1,150,000 cases per year [Abdulnabi, A. *et al.*, 2016]. Breast cancer is the most common cancer in the world, with 4,500,000 women surviving within five years of diagnosis. In Latin America, breast cancer death rates are on the rise and are at record levels in many countries, including Colombia, Costa Rica, Mexico, Puerto Rico, Uruguay, and Venezuela [Abdulnabi, A. *et al.*, 2016].

Moreover, a German study confirmed that some people with many risk factors never develop cancer, while other people with no known risk factors do develop cancer. Many cases of breast cancer occur in women who have no clear risk factors and no family history of breast cancer [Decker, M.R. *et al.*, 2012]. This means that all women should pay attention to possible changes in the breast by performing regular self-examinations and speaking with their doctor to perform clinical and radiological examinations, such as mammograms, in order to make an early diagnosis of any disease or to consider the possibility of more than one risk factor affecting the development of breast cancer. Cancer [Bandyopadhyay, A. *et al.*, 2019; Selaković, V. *et al.*, 2019]. For this reason, when a mastectomy is performed as a surgical procedure, it causes changes in certain specific aspects of body image, such as negative feelings about nudity and a

devaluation of a sense of physical attractiveness [Robertson, S.A. *et al.*, 2017]. One of the most notorious outcomes of mastectomy is the psychological impact of not knowing what a cancer diagnosis, mastectomy, and reconstruction will bring about, a condition that manifests itself in the patient with stress and uncertainty [Lawson, E.H. *et al.*, 2013]. Therefore, the loss of one or both breasts causes a woman psychological suffering. This depends on her age, her children, her husband, her job, and the degree of importance she placed on the breast before mastectomy, and it can present with a series of symptoms such as anxiety, insomnia, shame, feelings of worthlessness and worthlessness [Amaral, C. *et al.*, 2016; Klifto, K.M. *et al.*, 2019].

## PATIENTS AND METHODS

In this study, a descriptive cross-sectional study was applied to study the postoperative outcomes of breast cancer surgery of Iraqi patients from 8<sup>th</sup> June 2021 to 5<sup>th</sup> August 2022. Data were collected for 130 patients from 8<sup>th</sup> June 2021 to 5<sup>th</sup> August 2022. Data were collected for 130 patients from different hospitals in Iraq, where the patients were divided into two groups, the first group of patients, which included Harmonic focus surgery, which included 70, and the second group, the Monopolar electrocautery surgery, which included patients which include (60) patients. A statistical study was conducted for patients with osteoporosis using the SPSS program. This study presented the demographic results of a breast cancer patient for the collected data of 130 patients, where the data included AGE between 30-60 years, BMI, marital status, which included single, married, widow, separate, as well as educational level and economic level as shown in table 1. as for table 2, comparison of chronic diseases between Harmonic Focus (HF) surgery and monopolar electrocautery (ME) surgery of breast cancer patient was conducted for both groups, which included the first group, Harmonic focus surgery, which numbered (70), and the second group, which included Monopolar electrocautery surgery, which numbered (60), and included chronic diseases, which were represented by diabetes mellitus, hypertension, asthma, and antiplatelet therapy. As shown in Table 3, Outcomes of the breast cancer patient during surgery, which included Duration of operation (min), MEAN  $\pm$  SD, Blood loss (ML), MEAN  $\pm$  SD, No. Total lymph nodes, MEAN  $\pm$  SD, No. Positive lymph nodes, MEAN  $\pm$  SD, as well as PTNM, N (%), I, II, III, as shown in Table 3. Where it appeared in Table 4, Outcomes of

breast cancer patients after surgery, which included seroma, wound infection, hematoma, re-exploration, and re-admission. In Table 5, an assessment of the quality of life was included, including physical functioning, functional limitations, cognitive functioning, social

functioning, emotional functioning, financial difficulty, and global health status, as shown in Table 5.

## RESULTS

**Table 1:** The demographic results of a breast cancer patient.

Items	Frequency n (130)	%
Age		
30-39	36	27.69%
40-49	50	38.46%
50-60	44	33.85%
BMI	33±1.9	25.38%
Marital status		
single	32	24.62%
married	48	36.92%
Widow	30	23.08%
Separate	20	15.38%
Education level		
low	55	42.31%
MIDDLE	40	30.77%
High	35	26.92%
Economic level		
low	44	33.85%
middle	60	46.15%
high	26	20.00%

**Table 2:** Comparison of chronic diseases between Harmonic Focus (HF) surgery and monopolar electrocautery (ME) surgery of breast cancer patients

chronic diseases	Harmonic focus surgery (70)	monopolar electrocautery surgery (60)	P-value
Diabetes mellitus	20 (28.57%)	22 (36.67%)	0.0385
Hypertension	27 (38.57%)	21 (35%)	0.0452
Asthma	12 (17.14%)	9 (15%)	0.0476
Antiplatelet therapy	11 (15.71%)	8 (13.33%)	0.0478

**Table 3:** Outcomes of the breast cancer patient during surgery

Items	Harmonic focus surgery (70)	monopolar electrocautery (60) surgery	P- value
Duration of operation (min), mean ± SD	105.17 ± 25.4	140.34 ± 35.5	0.0477
Blood loss (mL), mean ± SD	104.22 ± 21.55	177 ± 44.5	0.0432
No. total lymph nodes, mean ± SD	15.26 ± 4.8	34.55 ± 6.4	0.0465
No. positive lymph nodes, mean ± SD	14.27 ± 4.5	56.33 ± 5.6	0.0427
pTNM, n (%)			
I	32 (45.71%)	24 (40%)	0.044
II	17 (24.29%)	22 (36.67%)	0.0366
III	12 (17.14%)	14 (23.33%)	0.042

**Table 4:** Outcomes of a breast cancer patient after surgery

Items	Harmonic focus surgery (70)	monopolar electrocautery (60) surgery	P-value
Seroma	1 (1.43%)	1 (1.67%)	0.0474
Wound infection	2 (2.86%)	2 (3.33%)	0.0466
Hematoma	4 (5.71%)	2 (3.33%)	0.0442
Re-exploration	2 (2.86%)	1 (1.67%)	0.0477
Re-admission	3 (4.29%)	1 (1.67%)	0.0426

**Table 5:** Assessment of quality-life for a breast cancer patient

Items	Harmonic focus surgery (70)	monopolar electrocautery (60) surgery	P-value
Physical Functioning	65±3.3	57±2.4	0.0475
Functional Limitations	53±5.4	44±3.33	0.0433
Cognitive Functioning	40±1.22	34±2.44	0.0463
Social Functioning	37±4.32	29±3.66	0.0463
pain	27±6.11	20±2.46	0.0475
Financial difficulty	22±5.57	16±4.78	0.0465
Global Health Status	21.3.5	13±5.5	0.0437

## DISCUSSION

Breast cancer is a chronic degenerative disease, and by its nature, it requires that women receive multimodal treatment, such as surgery, to control it, which exposes them to many risks that lead to postoperative complications [Thomsen, A.M.L. *et al.*, 2017]. For some women with advanced breast cancer, the cancer may not go away completely [Karimian, F. *et al.*, 2018]. These women may continue treatments such as chemotherapy, hormonal therapy, or other therapies to help control breast cancer and help relieve symptoms of the disease [Sørensen, L.T. *et al.*, 2002]. Learning to live with breast cancer that won't go away can itself cause some uncertainty. In this study, demographic data were presented, where the age of infection was for ages between 50-60 years, where the cases were 44 with 33.85%, with a minimum of 36 with 27.69% for ages between 30-39, and the BMI with cases reached  $33 \pm 1.9$  with 25.38%. Moreover, this study which presented the most susceptible cases and complications that occurred in marital status, and the most common complications were in married, comprising 48 with 36.92%. Based on previous studies, where the economic and educational level showed that it was more affected in middle and included 40 with 30.77%, and the economic level in MIDDLE where it showed 60 with 46.15%, as shown in Table 1. Also presented in Table 2 is a Comparison of chronic diseases between Harmonic Focus (HF) surgery and monopolar electrocautery (ME) surgery of breast cancer patients, where the most common chronic disease was in Diabetes mellitus, where the disease cases showed 20 (28.57%) for patients under Harmonic focus. surgery and 22 (36.67%) patients under

monopolar electrocautery surgery with P-value, and the lowest incidence was in antiplatelet therapy where 11 (15.71%) patients under harmonic focus surgery and 8 (13.33%) patients under monopolar electrocautery surgery were found as shown. in Table 2. Moreover, the Outcomes of the breast cancer patient during surgery were evaluated as Duration of operation (min); MEAN  $\pm$  SD was found in the collected data as it showed for Harmonic focus surgery patients which were  $105.17 \pm 25.4$  and for patients with Monopolar electrocautery surgery  $140.34 \pm 35.5$  with a P-value 0.0477 and Blood loss (ML), MEAN  $\pm$  SD as  $104.22 \pm 21.55$  for patients with Harmonic focus surgery and  $177 \pm 44.5$  for patients with Monopolar electrocautery surgery as well as No. total lymph nodes, MEAN  $\pm$  SD, where it was found that  $15.26 \pm 4.8$  for patients with Harmonic focus surgery and  $34.55 \pm 6.4$  for patients with monopolar electrocautery surgery, as well as PTNM, N (%) where the highest limit appeared in the I classification, as it was 32 (45.71%) for patients with Harmonic focus surgery And 24 (40%) for patients with monopolar electrocautery surgery and the lower limit was found in III where 12 (17.14%) for patients with Harmonic focus surgery and 14 (23.33%) for patients with monopolar electrocautery surgery with a P-value 0.042 as you can see in Table 3. This study presented the Outcomes of a breast cancer patient after surgery, where the most common problem is a pain in the area where the surgery was performed. There is also the possibility of infection in that area, as well as reactions to the drugs used to anesthetize that area of the body, and this is what the study provided, as it found that HEMATOMA was 4 (5.71%) for

patients with Harmonic focus surgery and 2 (3.33%) for patients with monopolar electrocautery surgery with P-value 0.0442, and the complications in patients under monopolar electrocautery surgery were less significant than patients under harmonic focus surgery, while the lower limit of SEROMA was found to be 1 (1.43%) for patients with harmonic focus surgery, while 1 (1.67%) for patients under monopolar electrocautery surgery with P-value 0.0474. In addition, this study included a general assessment of the quality of life of patients for both groups and showed that the group Monopolar electrocautery surgery better evaluated patients than the group Harmonic focus surgery, and this was shown by previous studies in Peru [19,20], a study conducted at the National Institute of Oncology indicated that 18% of patients Cancers see the quality of life at a good level, 60% reported a regular level, describing their experience as not very effective in the personal sphere, 22% stated that it is not in good health because their lives are affected in the social, physical and mental spheres. This paper concluded that the quality of life in patients with the disease is regular. According to the results, the characteristics of pain, weakness, fatigue, and irritability are noted. Likewise, they have memory problems and perceive that the treatment has affected their social life. It was also decided that the three dimensions (physical, psychological, and social) represent a deterioration in the quality of life at the normal level. This was confirmed by our study, where it was found that the GLOBAL HEALTH STATUS was  $21.3.5$  for patients with Harmonic focus surgery while  $13 \pm 5.5$  for patients under Monopolar electrocautery surgery with a P-value of 0.0437 as well as PAIN  $27 \pm 6.11$  for patients with Harmonic focus surgery while  $20 \pm 2.46$  for patients under Monopolar electrocautery surgery. In addition, SOCIAL FUNCTIONING was found to be  $37 \pm 4.32$  for patients with Harmonic focus surgery and  $29 \pm 3.66$  for monopolar electrocautery surgery.

## CONCLUSION

This study found that Monopolar electrocautery surgery outperformed Harmonic focus surgery in numerous intraoperative and postoperative parameters, including operational duration, blood loss, drain volume, and length of drain placement, in patients who had neoadjuvant CTH before BCS. In contrast, this study demonstrated no significant difference in the incidence of postoperative seroma and associated complications between Harmonic Focus and monopolar electrocautery. However,

Harmonic Focus is a viable and safe approach that should be preferred over traditional procedures in well-equipped institutions, and this study found this conclusion based on an assessment of the quality of life of patients within monopolar electrocautery surgery more successful and less cases than patients under harmonic focus surgery.

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