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RESEARCH ARTICLE

Role of surgery in metastatic breast cancer

Mohamed E.Eraki ,PHD[1],Rham Z.Ahmed, PHD[2],Abd El Motelb Mohamed, MD[3], Hassan Awad Saad,MD[1]

1. Department of general surgery, Faculty of medicine, Zagazig University, Egypt.

2. Department of medical oncology, Faculty of medicine, Zagazig University, Egypt.

3. Department of clinical oncology, Faculty of medicine, zagazig university, Egypt.

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Corresponding Author

Mohamed E.Eraki, PHD

Abstract

Purpose

Surgery of the primary tumor usually is not advised for patient with metastatic breast cancer at diagnosis because the disease is considered incurable. The goals of treatment are the prolongation of life and palliation or prevention of symptoms. In this study we evaluate the effect of mastectomy on survival of patients with metastatic breast cancer.

Methods

In our study we reviewed records of(100) patients with stage IV breast cancer referred to clinical oncology department faculty of medicine zagazig university and Fakous cancer center between Jan 2012 to Jan 2014 , data collection include metastatic sites ,treatment and survival. And we evaluate effect of surgery of the primary breast tumor to those who had not surgery on survival and prognostic factor.

Results

From 100 patients, 35 patients had only bone metastases, 65 patients with visceral metastases. Groups had a 15 months median survival, 45 patients receive hormonal therapy and 55 patients had not received. Groups had 13 months median survival, 60 patients receive chemotherapy with median survival 24 months and 40 patients not receive chemotherapy with 9 months median survival, ($p<0.02$), 35 patients receive radiotherapy and 65 not receive with same median survival. 30 patients with surgery to the breast primary with 25 months median survival. While 70 patients without surgery to the primary tumor with 15 months median survival with $p = 0.05$. Statistical analysis determined that chemotherapy is the only factor associated with improved survival $p=0.02$. While patients with hormonal therapy and radiotherapy had insignificant changes in survival .and the median survival became more significant with patients receive chemotherapy with excision of the primary tumor.

Conclusion

Complete surgical excision of the primary tumor improves survival of patients with metastatic breast cancer at diagnosis, especially among patients with only bone metastasis and with patients receives chemotherapy

INTRODUCTION

The incidence of synchronized distant metastatic disease in newly diagnosed breast cancer patients is between 3.5 % to 10% (1) .The current treatment for patients diagnosed with metastatic breast cancer is generally palliative with systemic therapy such as hormonal and chemotherapy as the recommended treatment .once metastases have occurred surgical resection of the primary breast tumor is not believed to improve survival (2).There for surgical treatment of the primary tumor is indicated only if it is symptomatic such as bleeding, ulceration or pain (3) Recent studies indicates that complete resection of the primary tumor significantly may prolong survival of patients with distant metastatic breast cancer Rapiti et al observed that women having surgery of the primary tumor had 50% reduction in breast cancer mortality compared with women who did not undergo surgery ,The survival benefit was limited to women with tumor free margins of resection (4) . With advancement of the treatment modalities of chemotherapy and target therapy the metastatic breast cancer don't survive beyond 5 years after diagnosis. The recommended primary treatment approach for women with metastatic breast cancer and an intact primary tumor is the use of systemic therapy with local therapy for the primary tumor reserved for palliation of symptoms (5). In the past 6 years have seen an accelerating pace of publication studies examining survival outcomes relative to the surgical resection of the intact primary tumor in women with metastatic breast cancer; however have never been sustained with randomized clinical trials(6). The one observational study that has been conducted found that surgery of the primary tumor can actually improve survival of metastatic breast cancer. five retrospective studies including the report of Fiedal et al in the present issue of the annals of surgical oncology , present us with consistent evidence that either surgical therapy of the primary tumor has a substantial survival benefit in women with metastatic breast cancer , or there is a strong and consistent selection bias driving the use of surgery in women who have more favorable profiles (younger age , smaller tumor burden, better access to care) now days studies indicate that removal of the primary tumor may have a beneficial on mortality risk of patients with primary metastatic breast cancer(7).

Patients and methods

We reviewed the medical records of 100 patients of breast cancer patients with stage IV disease who presented to oncology department and surgery department in faculty of medicine Zagazig University
From Jan 2012 to Jan 2014. base line information collected included demographic tumor catachrestic (size ,regional lymph node ,histological characteristics and grade)sites and number of metastases , use of hormonal therapy ,chemotherapy,radiotherapy,type and TNM classifications .and the patients were divided into two groups first group with resection of the primary tumor and second group non surgical patients in which the primary tumor didn't resected .Metastases were divided to patients with only bone metastases and patients with visceral metastases , (including with bone and visceral metastases . survival data were collected and analyzed ,.inclusion criteria were defined as (histological proven breast cancer, European Cooperative oncology Group, performance status , American joint committee of cancer stage any T any N and M1 bone metastases .

Results

One hundred patients fulfilled the inclusion criteria for this study, characteristics of patients and tumor are listed in the table 1.the median age was 50 years (range from 35 to 80), 30 patients (surgical group) with average age 53 years don resection to the primary tumor, 70 patients (non surgical group) without resection of the primary tumor with average age 65 years. the median follow up in both groups was 36 months .the median survival for surgical group was 23 months and 12 months for non surgical group with significant statically difference p value 0.0004. , all patients receive systemic therapy, 40%of surgical patients receive 2 or more regime of chemotherapy, and 70% of non surgical group receive 2 or more lines of chemotherapy. The median survival for patients receiving chemotherapy was 23 months compared to 9 months for patients who were not treated by chemotherapy, this survival advantage of the chemotherapy group was statistically significant with p value 0.0001. 30% of surgical patients receive hormonal therapy and 60% in non surgical patients receive hormonal therapy , the survival for both groups was 14 months with insignificant statistical difference.10 patients of surgical group receive radiation versus 20 patients in non surgical group with no statistical difference in survival between patients receive radiation and patients not receive , 20 patients of surgical groups went to operations before diagnosis of metastases and the metastases were discovered in the postoperative period by radiological methods, and 10 patients from surgical groups went to surgery after diagnosis of metastases , for local progression of the disease we found in 50% in non surgical group and in 15% of surgical group. When the primary tumor progressed locally, systemic therapy only controls 2 cases. we compare also patients with bone metastases only and patients with visceral metastases, then we compare the impact of surgery when added to systemic therapy, we found that the median survival was 20 months

for 25 patients who receive chemotherapy alone, and 23 months for the patients receiving chemotherapy and radiation, and 25 months for patients with systemic therapy plus surgery.

Discussion

Metastatic breast cancer is an incurable disease with a median life expectancy from 18 to 24 months (8). The optimal management of the metastatic breast cancer stage IV is unknown. A clinician and a patient may consider surgical resection of the primary tumor in this setting for multiple reasons. The effect of resection of the primary tumor in stage IV breast cancer can be divided into two main areas, the effect of surgery on overall survival and its effect on local disease control. Loco regional treatment of metastatic breast cancer patients is generally recommended as palliation for patients with large, bleeding or ulcerating tumor (9). In our study we evaluate the effect of surgery (mastectomy) in metastatic breast cancer on patient survival, Hortobagi GN et al showed that Removal of the primary tumor in stage IV breast cancer is not a common practice and growth of the metastases may be stimulated by surgery on the primary tumor through suppression of antimetastatic cell mediated immunity and increase of angiogenesis. But this hypothesis not supported in other cancer such as renal cell cancer, colorectal cancer and melanoma patients .in which surgery of the primary tumor suggested as a part of the treatment (10) In our study we review 100 patients with stage IV breast cancer, and we studied the effect of excision of the primary tumor on patient survival, we divide the patients in to two groups. Surgical group 30 patients in which the primary tumor was excised and non surgical group 70 patients in which the primary tumor not excised, the median survival for surgical group was 23 months and 12 months for non surgical group with statistical significant difference p value 0.0004. The first study which examine the effect of surgical resection of the primary tumor on survival of stage IV breast cancer was done by khan and collage in which retrospective review of national cancer data base of American college of surgeons between 1990 and 1993 patients with stage IV breast cancer were and 9162(57.2%) underwent resection of the primary tumor and analysis was performed to examine the impact of surgery on patients survival and the results showed that patients treated surgically with clear margins had superior prognosis to patients not treated surgically with a hazard ratio of 0.61(3). Other study of Rapti and collage in which 300 patients with metastatic breast cancer was reviewed retrospectively in which 127 patients underwent surgery to the primary tumor they found that 40% reduced risk of death when the primary tumor was excised with clear margin but the result not significant if compared to non surgical patient's p value was. 0.49,. but when the results controlled with patients with bone metastases only the results was significant p value was 0.001(4).our results are similar to reported by Khan et al .in retrospective study of 16,023 patients presenting with stage IV at initial breast cancer diagnosis .In the work of khan surgery of the primary tumor was associated with a 39% reduction in the risk of death, with 3 years survival of 35%for patients excised to negative margins ,26%for those with positive margins, and 17.3% for those not having surgery p<.o.0001. And axillary dissection was not found to contribute significantly to survival (3). in our study we also compare the patients receive chemotherapy and hormonal therapy in both groups we found that , there is no significant difference between two groups if patient receive or not receive hormonal therapy . and there is significant difference between patients taken chemotherapy in which the median survival was longer than patients not receive chemotherapy . and we found that the survival of patients was prolonged if chemotherapy associated with surgical excision of the primary tumor . and our results was not matched with Anna M et al in which Ann et al suggests that loco-regional therapy does not improve survival . Also they conclude that metastatic sites and hormonal therapy did not play a survival advantage for the surgery versus no surgery group (2). And our results matches with Anna et al in chemotherapy in which chemotherapy provide a significant increase in survival when combined with surgery.

Conclusion

Complete surgical excisions of the primary tumor improve survival of patients with
metastatic breast cancer at diagnosis, especially among patients with only bone metastasis and with patients receive chemotherapy. .

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